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ABSTRACT

This document reports on Phase II of a 2-year research project. The first phase had investigated the effects of socioeconomic mix on the cognitive and social development of disadvantaged preschoolers. The objectives of Phase II were (1) to continue assessment of effects on the disadvantaged subjects over a 2-year span during which there were four testing periods, and (2) to determine the effects of socioeconomic mix on the advantaged children. Subjects (N=37) classified as disadvantaged, and 25 advantaged preschoolers were studied in three group conditions. Group I had a ratio of 50/50 disadvantaged to advantaged; Group II, 75/25; and Group III (100% disadvantaged) served as a control. Instruments used to assess developmental change were the Preschool Inventory, the Peabody Picture Vocabulary Test, the Cincinnati Autonomy Test Battery, and the Kansas Social Interaction Observation Procedure. Two major conclusions drawn from analyzing the data were that (1) the positive effects of socioeconomic mix on the cognitive development of disadvantaged preschoolers were maintained over a 2-year period, and (2) the advantaged subjects who participated in the second year of the study realized positive gains on both the cognitive and social dimensions. Other conclusions concerned the effects of socioeconomic mix on adult-child interactions and the children's peer relationships. Data tended to support the value of socioeconomic mix in preschool classrooms; study limitations are delineated. (For related document, see ED 067 147.) (DP)

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SOCIOECONOMIC MIX EFFECTS ON DISADVANTAGED CHILDREN IN PRESCHOOL CHILD DEVELOPMENT PROGRAMS

PHASE II

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In Cooperation With

THE ARKANSAS RIVER VALLEY AREA COUNCIL

Robert L. Adkison, Executive Director

Supported by O. E. O.
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1973

ABSTRACT

The basic purposes of this study were twofold: 1) to determine the effects of socioeconomic mix on the development of disadvantaged children over a two-year period, and 2) to determine the effects on advantaged children who were chosen to participate in the study.

This study was the continuation of a study which was begun in September, 1970. In the original study data were obtained on disadvantaged subjects in each of three experimental groups which were labeled as Experimental I (N=50), Experimental II (N=47), and a Control group (N=71). Those subjects who remained in the program for the two-year period (September, 1970 to May 31, 1972) were included in this phase of the study (of which there were 10 subjects in the Experimental I group, 12 in the Experimental II group and 15 in the Control group). There were 25 subjects utilized in the study who were classified as advantaged subjects. There was a ratio of 50-50 disadvantaged-advantaged subjects in the Experimental I group, a 75-25 disadvantaged-advantaged ratio in the Experimental II group, and 100 percent disadvantaged in the Control group.

Analysis of average growth recorded four times over a two-year period was the method by which the data on the disadvantaged subjects were analyzed. The t values on pre-tests and post-tests covering a nine-month period (September, 1971 to May, 1972) was the method by which the data were analyzed on the advantaged subjects. The instruments utilized in the data collection were the Preschool Inventory, The Peabody Picture

Vocabulary Test, The Cincinnati Autonomy Test Battery, and the Kansas Social Interaction Observation Procedure.

The major conclusions which were drawn from the two-year study were:

1. The positive effects of socioeconomic mix on the cognitive development of disadvantaged children are sustained over a two-year period.

2. Increases in interactions between subjects and adults occur as the level of socioeconomic mix increases, and initially there are decreases in interactions between subjects and peers. However, over a prolonged period (two years) interactions between subjects and peers increase.

3. Interactions between subjects and adults decrease as the level of socioeconomic mix decreases. As the level of socioeconomic mix decreases there is an increase in interaction between subjects and peers.

4. Disadvantaged children functioning in classes of socioeconomic mix showed greater competency in interacting with adults under problem and stress situations.

5. The data did not support any preferred level of socioeconomic mix if the minimum was a 75-25 disadvantaged-advantaged ratio.

6. Those advantaged subjects who participated in the second year of the study realized positive gains on both the cognitive and social dimensions.

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The authors also wish to acknowledge the aid and support of the staff members of the Office of Child Development for their efforts in obtaining the permission necessary for setting up the experimental conditions of the study. Without the dedicated efforts of those identified, such a study would not have been possible.

Last, but certainly not least, the authors are grateful for the support given by the officials of State College of Arkansas. It should be recognized, however, that the materials contained in the report and any errors or shortcomings are the sole responsibility of the authors.

Clyde Reese
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February 1, 1973

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CHAPTER I

INTRODUCTION

Background

The report represents phase II of a continuation study which was begun September 1, 1970. The initial phase of the study covered the period of time between September, 1970 and May, 1971. The basic purpose of the initial study was to determine the effects of socioeconomic mix on the development of disadvantaged preschool children. Three experimental groups were employed in the initial study, two of which contained two levels of socioeconomic mix and one which was all disadvantaged children. The experimental groups were labeled as Experimental Group I, which contained 50 percent advantaged children and 50 percent disadvantaged children; Experimental Group II which contained 75 percent advantaged children; and the Control Group which contained only disadvantaged children.

Three phases of development were measured in the design of the study, cognitive, social, and language development. Cognitive measures employed in the study were the Test of Basic Experiences (for five-year-olds only), the Peabody Picture Vocabulary Test, and Preschool Inventory, and the Cincinnati Autonomy Test Battery. Social measures employed were the Kansas Social Interaction Observation Procedure and selected measures contained in the Cincinnati Autonomy Test Battery. Language development was measured through the analysis of tape recordings of the disadvantaged children in informal situations.

Twelve Child Development Centers functioning under the auspices of the Arkansas River Valley Area Council (ARVAC) were the centers utilized in the study. The centers were located essentially in rural areas, the largest community consisting of less than 10,000 in population. There were four centers for each of the three experimental groups.

The ages of the subjects ranged from three to six with essentially equal ratios of each age in all three groups. The groups contained both sexes essentially equal in number. There were 50 subjects in Experimental Group I, 47 in Experimental Group II, and 71 in the Control Group. The majority of subjects were five-years-old (84).

The experimental design employed was the pre-test, post-test gain score analysis. Analysis of variance procedures were utilized in the statistical analysis, except in those instances where the assumptions underlying the analysis of variance were not met. In those instances analysis of co-variance procedures were used.

There were six major conclusions drawn from the initial phase of the study:

1. Socioeconomic mix has a positive effect upon the cognitive development of disadvantaged children, with less positive effects on verbal skills than other areas of cognitive development.

2. As the level of socioeconomic mix increases there is an increase in interactions between subject and adults and a decrease in interaction between subject and peers.

3. Conversely, as the level of socioeconomic mix decrease in interactions between subject and peers.

4. Socioeconomic mix has a positive effect on the social competency of disadvantaged children, i. e., interactions with adults under problem and stress situations.

5. Socioeconomic mix has a positive effect in the development of socially directed behavior and a corresponding decrease in ego directed behavior.

6. Data were inconclusive to statistically substantiate preferred level of socioeconomic mix as being superior, although the trends tended to support the experimental II group.

For a complete presentation of the data and analysis of the results of the initial phase of the study, the reader is referred to the report submitted to the Department of Health Education and Welfare, Office of Child Development or to the E. R. I. C. Center in Urbana, Illinois.

Purposes

There were two basic purposes of the second phase of the study;

1) to ascertain the effects of socioeconomic mix over a two-year period on the disadvantaged children,

2) to determine the effects of socioeconomic mix on the advantaged children.

The first purpose was essentially a longitudinal study of the disadvantaged over a two-year period during which there were four testing periods. The second purpose was to ascertain the effects of socioeconomic mix on the intellectual and social development of the advantaged children.

Procedures and Design

The data were collected over a two-year period at four intervals

including the following times:

1. September 9, 1970 to October 15, 1970
2. April 1, 1971 to May 15, 1971
3. September 1, 1971 to October 15, 1971
4. April 1, 1972 to May 15, 1972

The number of subjects included in the two-year study were ten in the experimental I group, twelve in the experimental II group, and fifteen in the control group.

The instruments utilized in the data collection were the Preschool Inventory, the Peabody Picture Vocabulary Test, the Cincinnati Autonomy Test Battery, and the Kansas Social Interaction Observation Procedure.

Only those advantaged children who enrolled in the centers after July 1, 1971 were included in the study which yielded on N of twenty-five advantaged children. The same instruments were utilized in the data collection on the advantaged children as was used on the disadvantaged children. The two testing periods for the collection of data on the advantaged children were September 1, 1971 to October 15, 1971 and April 1, 1971 to May 15, 1972. The distinctions made between the advantaged and disadvantaged children were based on the original Office of Economic Opportunity Guidelines for identifying disadvantaged children.

Inasmuch as the basic purpose of the second phase of the study was to determine intellectual and social change over a two-year period the data were anlayzed by charting the mean change at each of the four

testing periods over the two-year period. The data is presented in Chapter II. The t test was utilized in the data analysis on the pre-test and post-test measures to determine the effects of socioeconomic mix on the advantaged children.

Chapter II includes a presentation of the data collected on the disadvantaged children as well as the advantaged children. Chapter III includes an analysis of the data and the conclusions drawn from the analysis.

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CHAPTER II

INTRODUCTION

The purpose of this chapter is to present the data collected for the two-year period on the disadvantaged children and the data collected on the advantaged children for the one-year period. The chapter is divided into two major sections: Disadvantaged Children and Advantaged Children. Under each of the major sections, the divisions correspond to the instruments utilized in the data collection. In addition to the presentation of the data, each division contains a description of the dimensions each of the instruments is designed to measure.

DISADVANTAGED SUBJECTS

Preschool Inventory

As was stated in the first phase of this study, the Pre-School Inventory was chosen because of its particular orientation toward the disadvantaged. As the author of the instrument states, the inventory was designed to "provide educators with an instrument that would permit them to highlight the degree of disadvantage which a child from a deprived background has at the time of entering school so that any observed deficits might be reduced or eliminated." As is implied in the above statement, the Inventory is designed for pre-school children ranging in age from three to six years.

The revised edition of the Pre-School Inventory which was used in this study contains 48 items and is designed to measure the child's performance in such areas as: basic information and vocabulary; number concepts

and ordination; concepts of size, shape, motion, and color; concepts of time, object class and function; visual motor performance; following instructions; and independence and self-help. The reader is referred to the test manual for a detailed discussion of the theoretical structure and the validity and reliability of the Inventory.

Presented in Table I are the means and standard deviations obtained by the three groups over the two-year period covering the four testing periods. Figure I is given so that the reader may make easy comparisons of the changes occurring over the four testing periods.

Peabody Picture Vocabulary Test

The Peabody Picture Vocabulary Test is designed to provide a measure of a subject's verbal intelligence through measuring his hearing vocabulary. The instrument may be used on subjects ranging from two years and six months to eighteen years of age. A discussion of the norms, validity, and reliability of the test is contained in the test manual. The instrument was included in this study because of its emphasis on hearing vocabulary and for comparisons with the Pre-School Inventory which was designed primarily for the disadvantaged.

The means and standard deviations obtained on the Peabody Picture Vocabulary Test are shown in Table II. Figure II yields a parallel comparison of the mean scores of each of the three groups over the four testing periods.

Cincinnati Autonomy Test Battery

The Cincinnati Autonomy Test Battery was included as one of the measures in this study because it addresses itself to the various aspects of

TABLE I

MEANS AND STANDARD DEVIATIONS OBTAINED ON THE PRESCHOOL INVENTORY BY THE EXPERIMENTAL GROUPS OVER THE FOUR TESTING PERIODS

		T_1	T_2	T_3	T_4
Experimental I	$\bar{X}$	32.7	40.0	44.4	51.3
	S	11.4	11.5	11.0	11.5
Experimental II	$\bar{X}$	34.7	46.6	50.2	52.5
	S	10.1	7.5	7.1	6.9
Control	$\bar{X}$	32.5	39.5	43.8	47.1
	S	13.6	12.5	11.0	10.4

TABLE II

MEANS AND STANDARD DEVIATIONS OBTAINED ON THE PEABODY PICTURE VOCABULARY TEST BY THE EXPERIMENTAL GROUPS OVER THE FOUR TESTING PERIODS

		T_1	T_2	T_3	T_4
Experimental I	$\bar{X}$	86.9	96.3	95.4	106.6
	S	10.5	11.8	11.2	9.0
Experimental II	$\bar{X}$	93.4	97.1	99.3	105.1
	S	11.0	9.1	10.5	10.0
Control	$\bar{X}$	85.4	92.8	93.7	98.8
	S	11.2	11.6	16.8	15.8

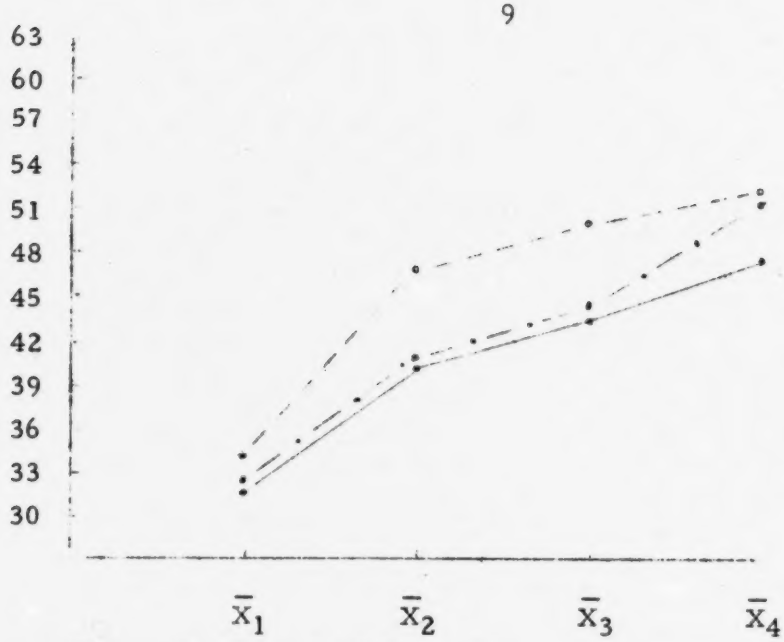

Figure I - Preschool Inventory

Exp. I
Exp. II
Cont.

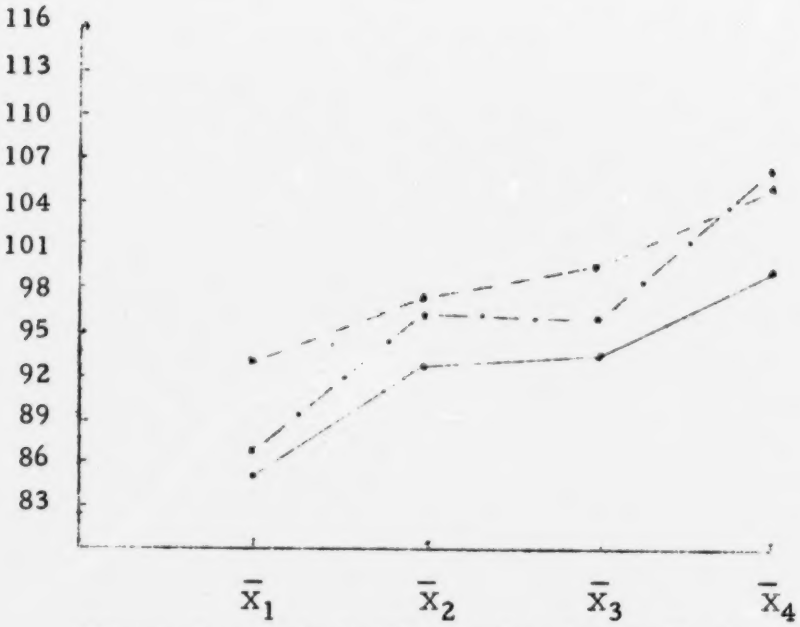

Figure II - Peabody Picture Vocabulary Test

Exp. I
Exp. II
Cont.

cognitive and social behaviors not included in the more conventional cognitive measures. As the author of the instrument indicates, "the instrument was designed to measure autonomous functioning in problem solving rather than focusing on the appropriate, the conventional and the quick response which is characteristic of most standard cognitive measures. The reader is referred to the book, Cognitive Studies, Volume I, edited by Jerome Hellmuth for a discussion of the theory underlying the construction of the instrument and of its validity and reliability.

The rationale underlying the development of the test and test materials were: 1) relevance to autonomy theory, 2) relevance to later childhood and adulthood, 3) emphasis on behavioral rather than oral responses, 4) attractiveness of the materials to children, 5) minimal verbal demands on the child, both in instruction and responses, and 6) checks on the child's comprehension of instructions so that low scores will not be the result of not having caught on to the task.

The instrument provides scores on 12 basic variables which are identified and briefly described:

1. Curiosity: Tendency to explore, manipulate, investigate, and discover in relation to novel stimuli.

2. Innovative Behavior: Tendency to generate alternative solutions to problems.

3. Impulse Control: Tendency to restrain motor activity when the task demands it.

4. Reflectivity: Tendency to wait before making a response that requires analytic thinking, when the task demands it.

5. Incidental Learning: Tendency to acquire information not referred to in the instructional stimuli.

6. Intentional Learning: Tendency to acquire information specified in the instructional stimuli

7. Persistence: Attention to a problem with solution-oriented behavior where the goal is specified.

8. Resistance to Distraction: Persistence, with distracting stimuli present.

9. Field Independence: Tendency to separate an item from the field or context of which it is a part.

10. Task Competence: Ratings of tendency to deal effectively with problems of many kinds.

11. Social Competence: Ratings of ability to work comfortably with adults.

12. Kindergarten Prognosis: Ratings of ability to do well in conventional kindergarten.

Shown in Table III are the means and standard deviations on each of the twelve variables included in the Cincinnati Autonomy Test Battery covering the four testing periods. Figures III through XIV gives the reader the opportunity to compare the changes occurring over the four testing periods for the three experimental groups on each of the twelve variables measured by the Cincinnati Autonomy Test Battery.

The Kansas Social Interaction Observation Procedure

The Kansas Social Interaction Observation Procedure was included as one of the instruments in this study for the purpose of measuring socialization. The instrument was originally designed to measure social interaction on 109 variables, however, 30 variables were chosen for data collection and analysis in this study.

The basic purpose of the instrument is to provide a measure of the

TABLE III

MEANS AND STANDARD DEVIATIONS OBTAINED ON THE CINCINNATI AUTONOMY TEST BATTERY BY THE EXPERIMENTAL GROUPS OVER THE FOUR TESTING PERIODS

Variable		Experimental I				Experimental II				Control			
		T_1	T_2	T_3	T_4	T_1	T_2	T_3	T_4	T_1	T_2	T_3	T_4
1. Curiosity	$\bar{X}$	16.9	15.1	15.9	17.8	15.6	19.4	17.7	20	10	15.4	13	18
	S	4.4	3.9	4.2	4.6	3.7	4.1	4.3	4.2	3.9	4.8	4.5	4.1
2. Innovative Behavior	$\bar{X}$	4.9	7.2	6.1	7.9	5.1	7.6	7.5	9.3	4.2	3.8	6.6	5.2
	S	2.9	3.1	3.8	3.4	2.0	2.4	3.6	3.5	3.8	2.7	4.0	4.5
3. Impulse Control	$\bar{X}$	14.41	12.33	14.52	12.68	14.74	14.82	15.80	12.18	7.48	7.54	15.34	17.64
	S	8.2	6.3	6.6	7.8	5.5	7.0	7.6	7.9	6.2	6.0	8.1	4.9
4. Reflectivity	$\bar{X}$	5.2	6.8	6.8	8.8	5.4	7.9	7.9	9.7	4	6	6.6	7.6
	S	2.8	2.3	2.2	2.3	1.5	1.7	2.4	2.2	1.9	1.6	1.8	2.9
5. Persistence	$\bar{X}$	19.9	21.6	21	23.7	18.6	22	22.9	23.7	21.2	20.4	22	22
	S	4.7	3.1	4.0	.95	3.6	2.7	2.0	.95	5.2	5.4	5.2	4.4
6. Intentional Learning	$\bar{X}$	3.2	4.6	3.9	4.8	4	5.5.	4.3	4.7	3.8	4.2	4	4.6
	S	2.0	2.2	1.5	1.9	1.1	2.1	.82	1.6	1.5	2.4	1.2	2.2
7. Incidental Learning	$\bar{X}$	2.6	3.2	2.8	3.7	3.2	4.6	3.5	4.5	1.4	2	3	3
	S	1.1	1.6	1.1	1.9	1.1	1.6	2.4	2.3	1.5	1.8	1.6	2.5
8. Resistence to Distraction	$\bar{X}$	9.5	10.0	11.4	12	10	12.4	11.9	12.8	9.8	9	10.8	11
	S	4.5	4.7	3.8	4.6	3.4	5.6	4.5	4.3	5.5	5.2	4.2	3.9

TABLE III (Cont'd)

Variable		Experimental I				Experimental II				Control			
		T_1	T_2	T_3	T_4	T_1	T_2	T_3	T_4	T_1	T_2	T_3	T_4
9. Field Independence	$\bar{X}$	7	10.3	10.4	10.9	7.5	9.9	10.6	9.8	7.2	9.4	8.6	9.6
	S	2.3	2.5	2.3	2.7	2.2	2.8	2.0	2.9	3.0	3.2	2.9	3.2
10. Task Competence	$\bar{X}$	3.35	3.4	3.31	3.82	2.9	3.5	3.35	3.61	3.4	3.2	3.5	3.6
	S	.88	.84	.72	.63	.74	.70	.47	.56	.90	1.1	.58	.42
11. Social Competency	$\bar{X}$	3.15	3.3	3.27	3.67	2.9	3.4	3.3	3.57	3.1	3.2	3.4	3.54
	S	.47	.83	.74	.47	.57	.70	.48	.50	.74	.83	.65	.56
12. Kindergarten Prognosis	$\bar{X}$	3.3	3.4	3.3	3.6	3.1	3.5	3.4	3.8	3	2.8	3	3.2
	S	.67	.70	.70	.51	.57	.71	.52	.42	1.7	.84	.40	.45

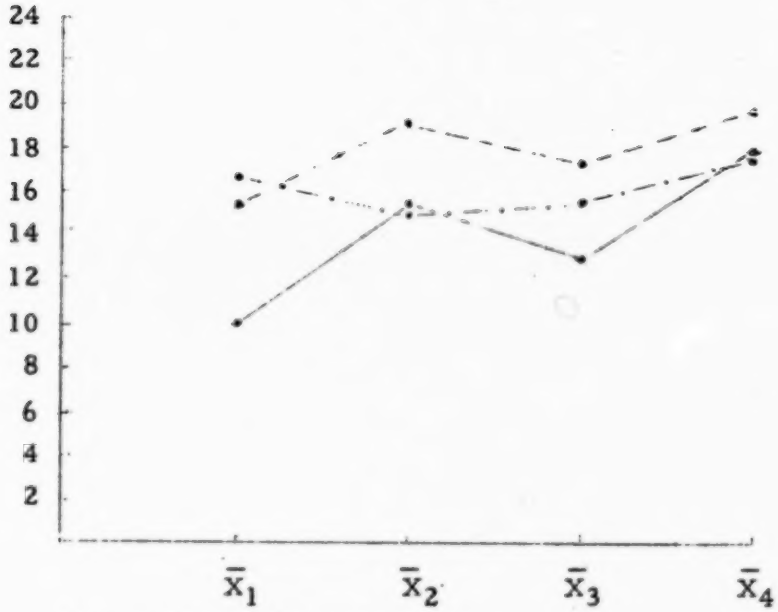

Figure III- CATB - Curiosity

Exp. I
Exp. II
Cont.

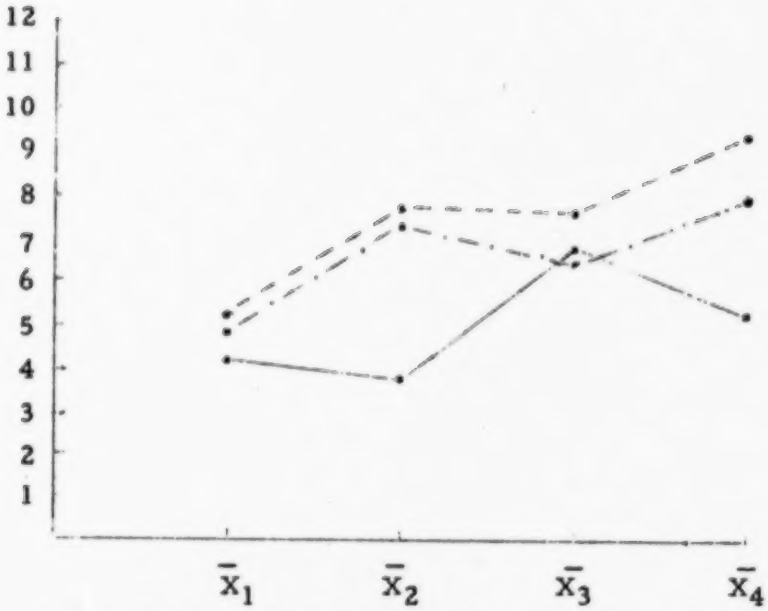

Figure IV - CATB - Innovative Behavior

Exp. I
Exp. II
Cont.

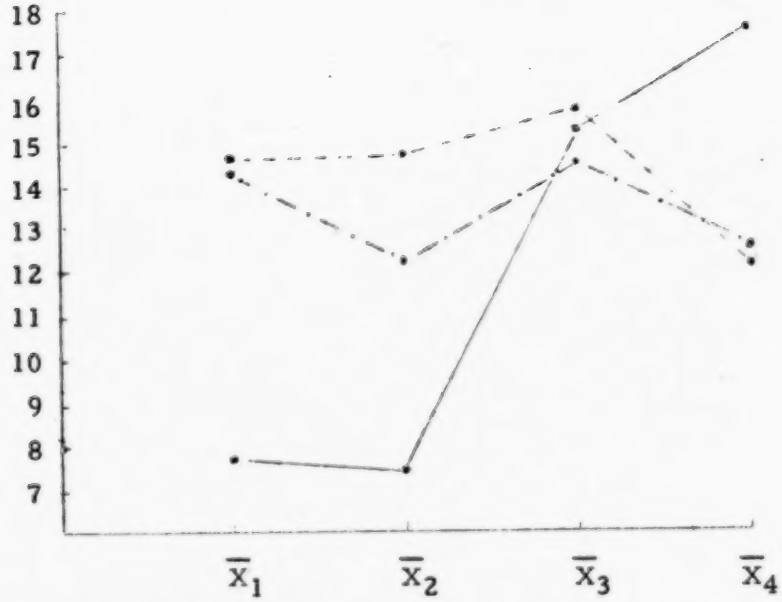

Figure V - CATB - Impulse Control

Exp. I
Exp. II
Cont.

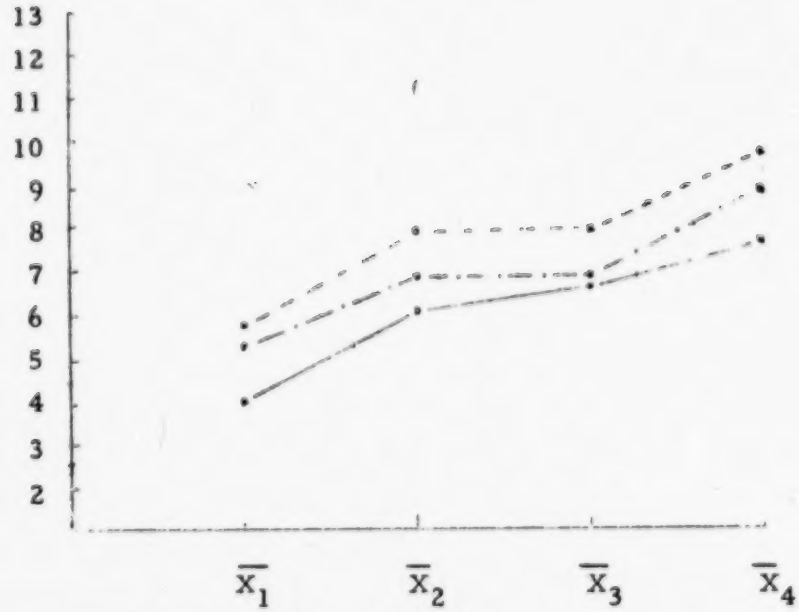

Figure VI - CATB - Reflectivity

Exp. I
Exp. II
Cont.

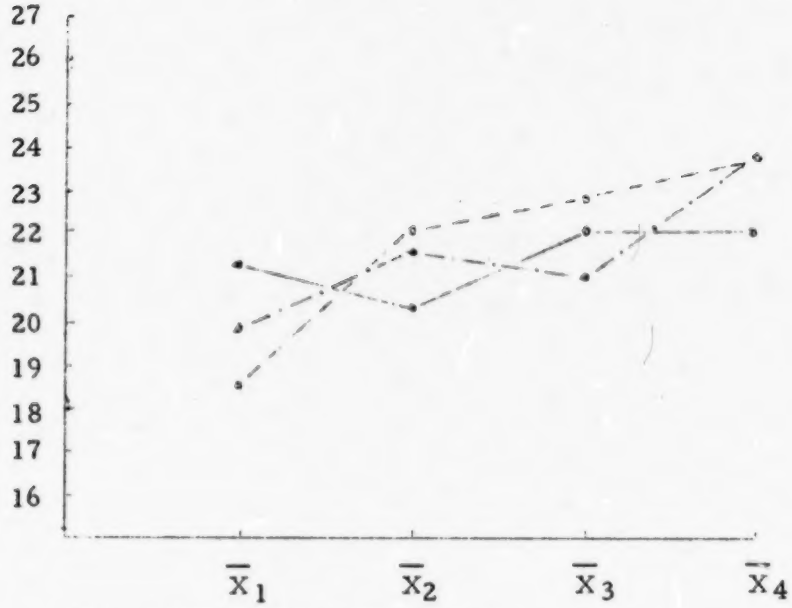

Figure VII-CATB - Persistence

Exp. I
Exp. II
Cont.

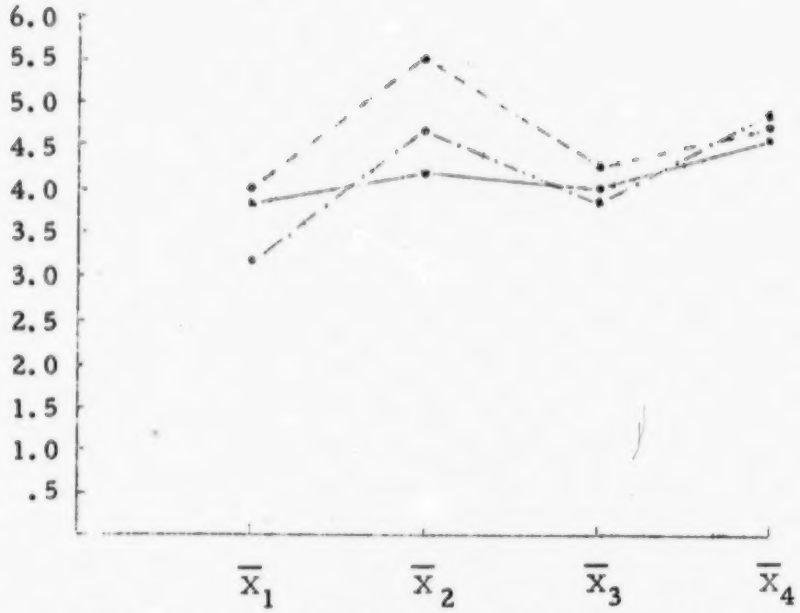

Figure VIII-CATB - Intentional Learning

Exp. I
Exp. II
Cont.

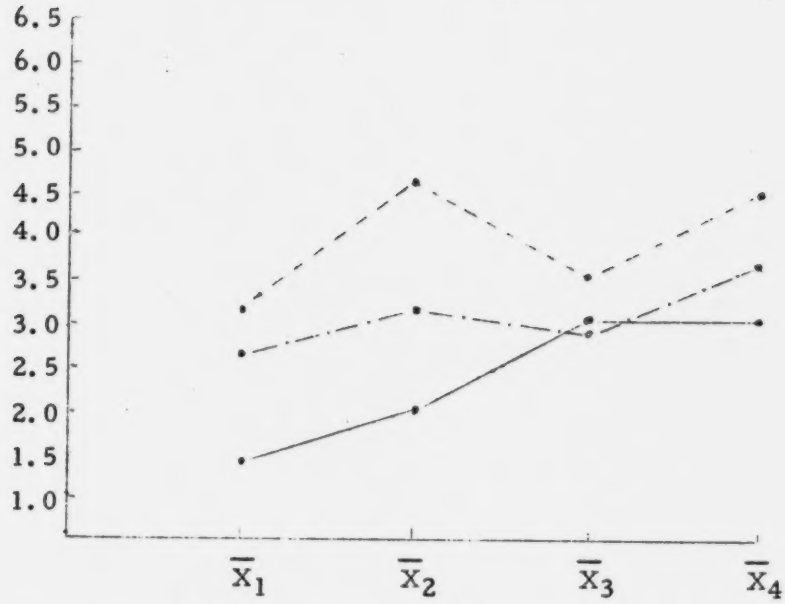

Figure IX - CATB - Incidental Learning

Exp. I
Exp. II
Cont.

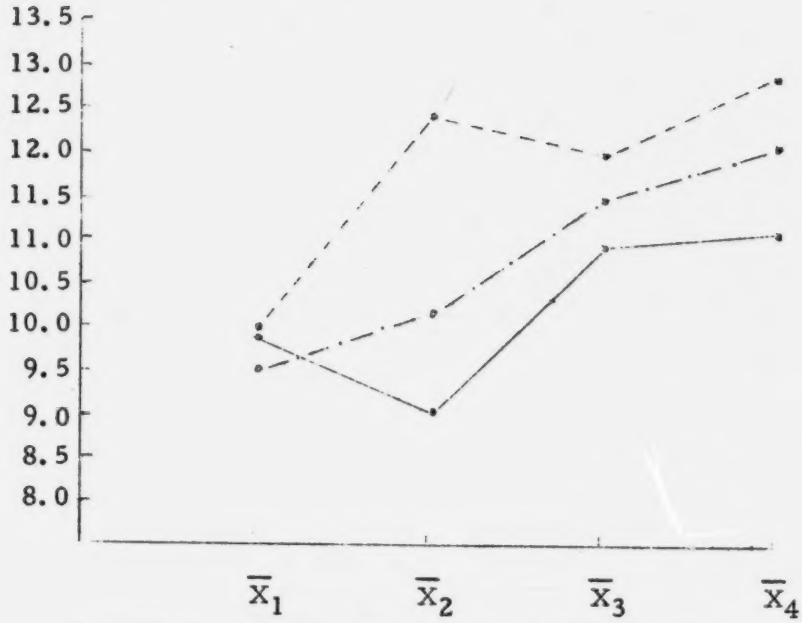

Figure X - CATB - Resistance to Distraction

Exp. I
Exp. II
Cont.

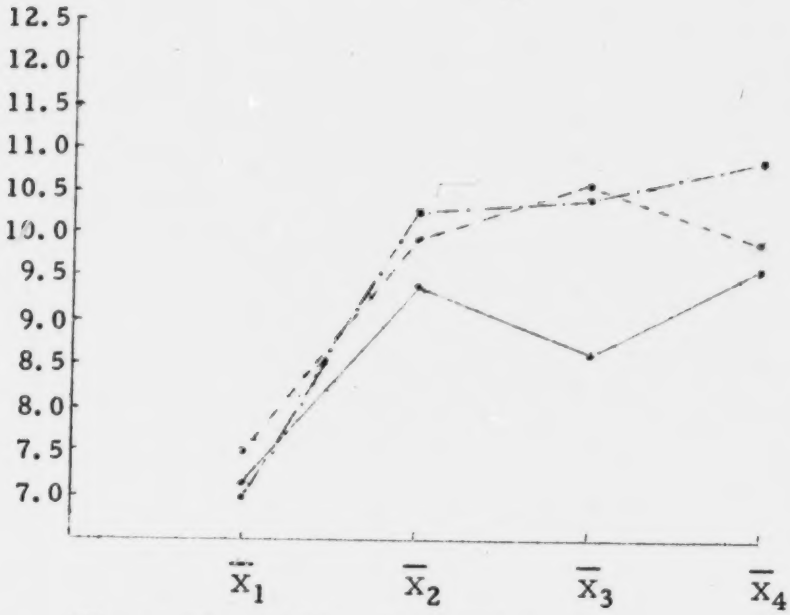

Figure XI - CATB - Field Independence

Exp. I
Exp. II
Cont.

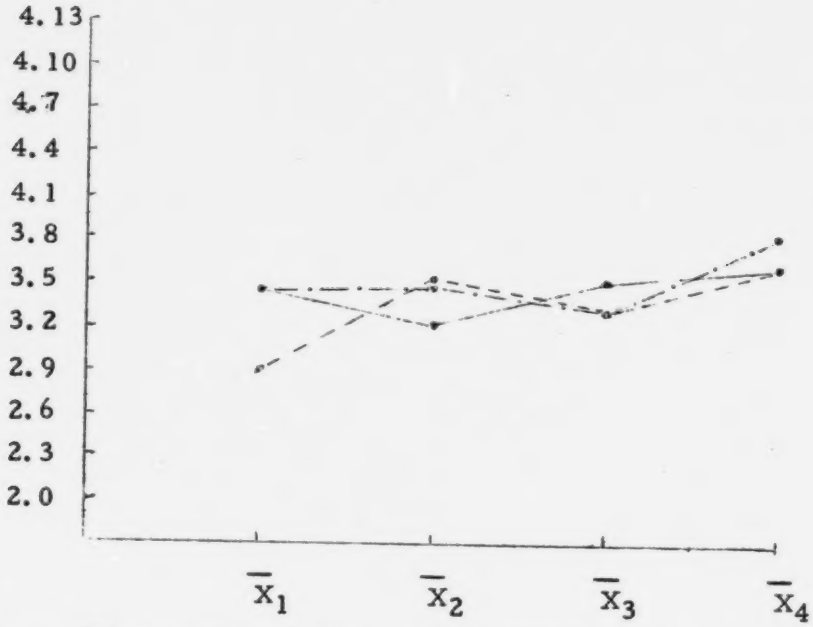

Figure XII - CATB - Task Competence

Exp. I
Exp. II
Cont.

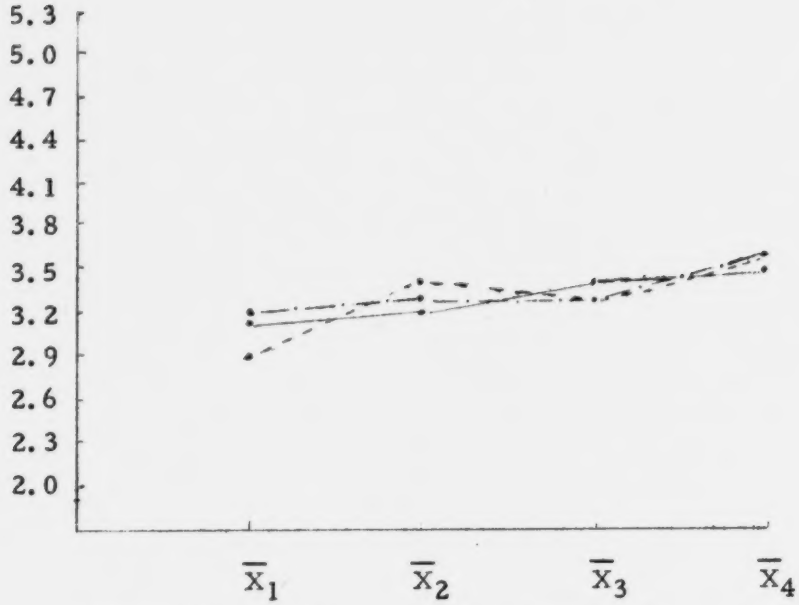

Figure XIII - CATB - Social Competence

Exp. I
Exp. II
Cont.

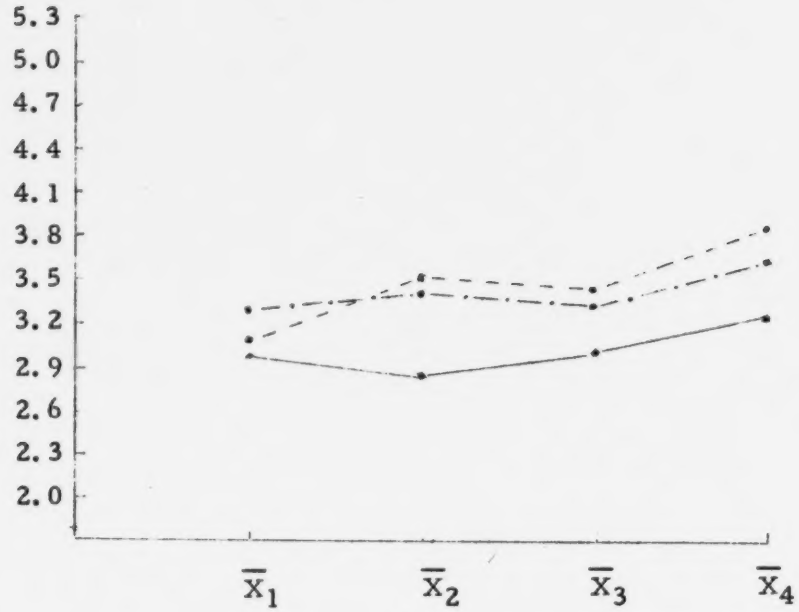

Figure XIV - CATB - Kindergarten Prognosis

Exp. I
Exp. II
Cont.

frequency of verbal and non-verbal interactions between two or more persons during the subject's free play periods and under normal activities within the classroom setting. The measures are related to verbal and non-verbal initiations and responses of the subject and by others, and verbal and non-verbal responses not responded to by the subject and by others within the classroom environment.

The thirty variables on which data were collected and analyzed for this study are identified and briefly described below:

1. $\sum$ Verbal Interactions S and A: The frequency of verbal interactions between the observed child and an adult.

2. $\sum$ Verbal Interactions S and P: The frequency of verbal interactions between the observed child and a peer.

3. $\sum$ Nonverbal Interactions S and A: The frequency of nonverbal interactions between the observed child and an adult.

4. $\sum$ Nonverbal Interactions S and P: The frequency of non-verbal interactions between the observed child and a peer.

5. $\sum$ Verbal-Nonverbal Interactions S and A: The frequency of interactions containing both verbal and nonverbal cues between the observed child and an adult.

6. $\sum$ Verbal-Nonverbal Interactions S and P: The frequency of interactions containing both verbal and nonverbal cues between the observed child and a peer.

7. Total Verbal Interactions: The frequency of all verbal interactions between the observed child and another person.

8. Total Nonverbal Interactions: The frequency of non-verbal interactions between an observed child and another person.

9. Total Verbal-Nonverbal Interactions: The frequency of interactions containing both verbal and nonverbal cues between an observed child and another person.

10. Σ S and A Interactions: The frequency of social interactions between an observed child and an adult.

11. Σ S and P Interactions: The frequency of social interactions between an observed child and a peer.

12. Total Verbal Initiations by S: The frequency of verbal initiations made by the observed child.

13. Total Nonverbal Initiations by S: The frequency of nonverbal initiations made by the observed child.

14. Total Verbal Responses by S: The frequency of verbal responses made by the observed child.

15. Total Nonverbal Responses by S: The frequency of nonverbal responses made by the observed child.

16. S to A Initiations Responded to: The frequency of initiations made by the observed child to an adult that is responded to by the adult.

17. S to P Initiations Responded to: The frequency of initiations made by the observed child to a peer that are responded to by the peer.

18. A to S Initiations Responded to: The frequency of initiations made by an adult to the observed child that are responded to by the child.

19. P to S Initiations Responded to: The frequency of initiations made by a peer to the observed child that are responded to by the child.

20. Total Initiations Responded to: The frequency of initiations made either to or <u>by</u> the observed child that are responded to.

21. S to A Initiations Not Responded to: The frequency of initiations made by the observed child to an adult that are not responded to by the adult.

22. S to P Initiations Not Responded to: The frequency of initiations made by the observed child to a peer that are not responded to by the peer.

23. A to S Initiations Not Responded to: The frequency of initiations made by an adult to the observed child that are not responded to by the child.

24. P to S Initiations Not Responded to: The frequency of initiations made by a peer to the observed child that are not responded to by the child.

25. Total Initiations Not Responded to: The frequency of initiations made either to or by the observed child that are not responded to.

26. Total S to A Interactions: The frequency of interactions with the observed child initiating to an adult.

27. Total S to P Interactions: The frequency of interactions with the observed child initiating to a peer.

28. Total A to S Interactions: The frequency of interactions with an adult initiating to the observed child.

29. Total P to S Interactions: The frequency of interactions with a peer initiating to the observed child.

30. Total Interactions S to G: The frequency of interactions of the observed child with a group.

Presented in Table IV are the means and standard deviations of the scores obtained on the Kansas Social Interaction Observation Procedure by each of the three experimental groups over the four testing periods. Figures XV through XLIV provide a comparison of the changes occurring by the three groups on each of the thirty variables measured by the Kansas Social Interaction Observation Procedure over the two-year period.

There were 25 subjects who were classified as advantaged subjects which were included in the study. Only those advantaged students who enrolled in the program between July 1, 1971 and September, 1971 were included. Those subjects who participated in the first phase of the study and remained

TABLE IV

MEANS AND STANDARD DEVIATIONS OBTAINED ON THE KANSAS SOCIAL INTERACTION OBSERVATION PROCEDURE BY THE EXPERIMENTAL GROUPS OVER THE FOUR TESTING PERIODS

Variable		Experimental I				Experimental II				Control			
		T_1	T_2	T_3	T_4	T_1	T_2	T_3	T_4	T_1	T_2	T_3	T_4
1. Verbal Interaction Subject & Adult	$\bar{X}$	9.3	10.0	8.4	11.2	6.2	8.8	7.7	8.8	8.2	8.0	7.7	7.7
	S	5.2	6.8	4.0	6.3	5.9	6.4	5.9	6.3	5.6	3.9	4.9	4.2
2. Verbal Interaction Subject & Peer	$\bar{X}$	18.9	25.6	21.8	23.8	19.0	22.5	19.9	22.3	18.7	21.0	21.4	24.4
	S	8.0	9.5	8.9	6.4	9.5	9.3	6.9	4.0	6.3	8.1	6.9	4.2
3. Non-Verbal Interaction Subj. & Adult	$\bar{X}$	1.0	1.2	1.4	1.8	1.5	1.3	1.3	1.4	.9	1.1	.8	1.0
	S	1.4	2.2	1.4	1.5	1.2	1.6	1.9	2.5	1.3	1.1	1.4	1.1
4. Non-Verbal Interaction Subj. & Peer	$\bar{X}$	4.0	3.9	5.0	5.9	3.2	3.8	5.2	5.6	4.3	4.8	5.4	5.0
	S	3.3	3.3	2.2	4.5	2.5	1.8	3.1	2.3	2.4	3.7	3.7	3.0
5. Verbal & Non-Verbal Interaction Subj. & Adu	$\bar{X}$	1.5	1.4	1.8	1.6	1.0	1.2	1.2	1.8	.9	.6	1.2	1.3
	S	1.4	1.6	2.2	1.5	1.2	1.3	1.3	1.6	.83	.74	.89	.89
6. Verbal & Non-Verbal Interaction Subject & Peers	$\bar{X}$	1.6	2.2	3.0	3.8	1.9	2.0	3.2	3.3	2.0	2.6	3.4	3.6
	S	1.2	1.8	1.0	1.9	1.5	2.7	1.4	1.3	2.1	1.2	1.6	1.7
7. Total Verbal Interactions	$\bar{X}$	26.1	31.5	28.6	29.6	26.4	34.2	27.8	29.0	28.0	28.9	28.0	27.4
	S	11.1	8.1	10.4	5.9	9.9	12.4	4.1	3.2	7.9	8.0	8.0	6.4
8. Total Non-Verbal Interactions	$\bar{X}$	4.9	5.1	6.7	7.8	4.2	5.0	7.0	7.6	5.2	6.2	6.4	6.0
	S	1.5	3.6	2.8	4.9	3.1	2.0	4.3	2.2	2.2	3.9	3.8	2.7

TABLE IV (Con't.)

Variable		Experimental I				Experimental II				Control			
		T_1	T_2	T_3	T_4	T_1	T_2	T_3	T_4	T_1	T_2	T_3	T_4
9. Total Non-Verbal & Verbal Interaction	$\bar{X}$	3.9	4.0	6.5	7.3	3.2	4.6	5.3	6.0	3.4	2.0	5.0	4.8
	S	1.9	3.0	3.1	3.5	1.8	3.8	1.2	2.9	2.8	1.1	1.9	1.7
10. Subject & Adult Interaction	$\bar{X}$	7.6	9.3	10.5	10.8	5.6	5.6	9.0	8.0	8.4	9.7	10.5	9.5
	S	7.6	9.0	4.8	5.0	4.5	2.3	3.7	5.1	6.0	3.8	7.8	4.6
11. Subject & Peer Interaction	$\bar{X}$	24.6	27.0	30.7	28.1	25.6	32.8	33.0	31.0	26.7	28.4	32.0	28.1
	S	11.2	12.2	11.8	9.8	11.0	13.3	12.4	6.6	10.7	9.9	9.3	5.3
12. Total Verbal Initiations by Subj.	$\bar{X}$	22.7	27.3	26.8	24.5	27.2	27.7	24.7	25.2	24.9	25.4	26.6	24.2
	S	10.9	8.5	15.3	7.6	5.2	12.3	10.3	8.7	4.9	6.8	8.5	6.0
13. Total Non-Verbal Initiations by Subj.	$\bar{X}$	3.2	4.1	5.9	6.9	2.8	4.0	5.8	5.6	4.2	5.4	6.4	6.8
	S	2.4	2.3	3.3	2.7	1.6	4.1	2.2	3.0	2.1	3.0	3.5	3.4
14. Total Verbal Responses by Subj.	$\bar{X}$	6.1	8.1	5.9	8.1	6.0	8.2	7.4	8.6	5.9	5.5	5.5	7.0
	S	4.2	3.3	3.3	3.9	1.6	5.2	3.7	2.5	3.3	2.3	2.6	4.8
15. Total Non-Verbal Responses by Subj.	$\bar{X}$	4.5	3.0	5.4	6.0	4.8	5.2	6.2	7.6	4.9	4.5	6.7	7.6
	S	3.1	2.3	3.2	2.3	2.5	3.5	1.9	4.6	2.4	1.9	2.8	4.2
16. Subj. to Adult Initiations Resp. to	$\bar{X}$	3.6	5.5	6.9	7.1	3.6	3.8	5.4	6.1	3.5	3.5	3.8	4.8
	S	4.4	4.5	3.9	3.9	2.2	1.1	3.4	2.7	2.8	2.5	2.7	4.2
17. Subject to Peer Initiations Resp. to	$\bar{X}$	7.8	10.5	12.9	13.6	7.6	10.2	12.4	13.4	8.5	13.0	15.6	15.4
	S	5.0	4.8	4.9	4.2	3.1	3.5	3.6	4.2	3.5	3.0	6.7	4.8
18. Adult to Subject Initiations Resp.to	$\bar{X}$	2.5	3.3	4.1	4.5	2.6	2.8	3.2	3.6	2.6	2.9	3.0	3.2
	S	2.9	2.7	3.2	4.2	2.3	2.4	2.3	1.7	2.0	2.5	1.9	2.6

TABLE IV (Con't.)

Variable		Experimental I				Experimental II				Control			
		T_1	T_2	T_3	T_4	T_1	T_2	T_3	T_4	T_1	T_2	T_3	T_4
19. Peer to Subject	$\bar{X}$	9.0	9.5	9.7	10.7	11.2	12.6	14.2	15.2	9.8	10.9	12.7	13.8
Initiations Resp. to	S	4.8	4.6	2.1	5.2	5.8	6.0	2.9	3.9	4.8	3.5	3.4	5.1
20. Total Initiations	$\bar{X}$	24.0	28.5	32.5	31.3	24.8	30.1	31.4	32.8	24.5	25.8	31.9	29.1
Responded to	S	13.9	10.7	7.0	8.8	9.8	9.6	7.5	8.2	11.1	6.6	7.5	8.6
21. Subj. to Adult	$\bar{X}$	.8	7	.9	.6	.6	.6	1.2	1.2	1.2	1.5	1.0	1.2
Initiations Not Resp to	S	1.0	.79	1.14	.67	.89	.55	.84	1.1	1.4	1.6	2.0	1.4
22. Subj. to Peer	$\bar{X}$	4.9	5.2	4.7	2.5	4.2	2.2	4.2	2.4	5.0	5.0	6.0	5.4
Initiations Not Resp to	S	1.1	2.5	3.0	2.3	2.1	1.5	1.5	1.3	3.3	3.3	4.7	3.9
23. Adult to Subject	$\bar{X}$	1.5	1.4	.7	.4	1.0	1.0	.6	.4	1.2	1.2	1.1	.8
Inits. Not Resp. to	S	1.8	1.01	.79	.67	1.0	1.2	.55	.55	1.3	.83	.76	.71
24. Peer to Subj. Inits.	$\bar{X}$	1.7	1.9	1.0	.8	1.2	2.4	2.4	.8	2.3	2.8	2.2	1.1
Not Responded to	S	1.3	1.5	.89	1.2	2.2	1.7	1.5	.84	1.9	1.8	1.0	1.4
25. Total Initiations	$\bar{X}$	10.8	10.1	8.8	4.7	9.0	10.2	8.2	5.4	11.2	10.0	10.1	6.3
Not Responded to	S	5.7	4.7	7.9	6.6	4.8	4.4	2.2	1.5	4.0	2.9	6.5	3.4
26. Total Subject to	$\bar{X}$	7.2	8.4	9.8	9.3	6.0	8.2	8.6	8.0	6.9	5.7	6.0	7.0
Adult Interaction	S	4.3	4.4	3.2	2.4	2.5	5.5	5.9	4.6	5.0	3.6	3.7	3.9
27. Total Subject to	$\bar{X}$	12.6	14.5	19.2	17.0	13.0	16.0	20.8	21.6	14.0	17.5	21.4	21.2
Peer Interaction	S	7.2	8.4	12.7	4.1	7.0	11.6	7.6	5.9	7.0	7.1	6.7	6.0
28. Total Adult to Subj.	$\bar{X}$	3.9	4.9	4.8	5.0	3.4	3.2	4.0	3.8	4.0	3.8	3.9	4.4
Interaction	S	3.3	4.1	3.9	4.6	2.2	2.4	2.5	2.1	1.9	2.6	1.8	3.0

TABLE IV (Con't.)

Variable		Experimental I				Experimental II				Control			
		T_1	T_2	T_3	T_4	T_1	T_2	T_3	T_4	T_1	T_2	T_3	T_4
29. Total Peer to Subj. Interaction	$\overline{X}$	11.2	10.5	11.3	12.1	12.6	14.8	15.6	16.0	10.7	12.4	12.0	13.1
	S	3.7	5.5	3.3	4.5	6.8	7.3	4.1	2.7	4.5	2.8	2.7	3.4
30. Total Interaction Subj. to Group	$\overline{X}$	4.5	4.6	5.9	5.6	5.8	6.6	6.2	6.8	4.2	4.8	5.9	6.1
	S	7.5	5.0	6.9	5.5	6.8	7.5	3.7	4.0	5.3	7.0	6.3	7.9

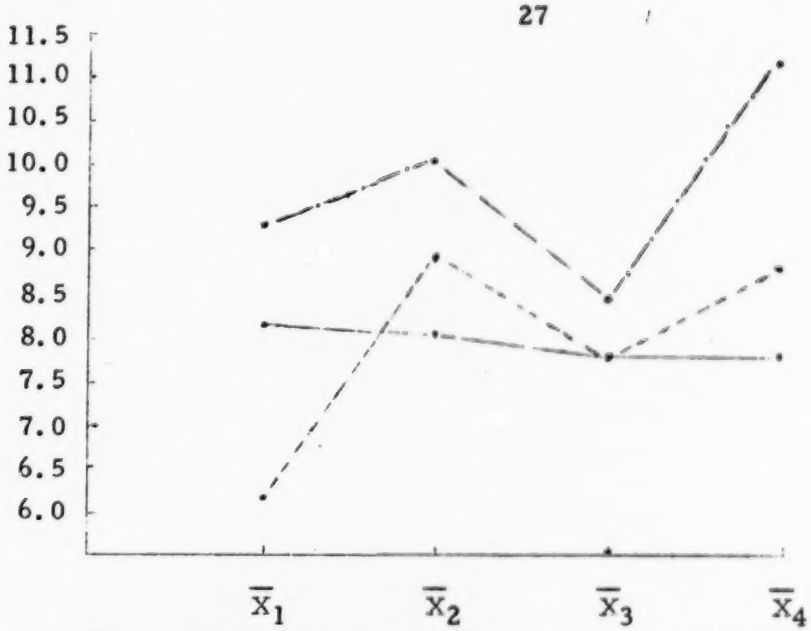

Figure XV - Kansas Social Interaction Observation Procedure - Verbal Interactions Subject and Adult

Exp. I
Exp. II
Cont.

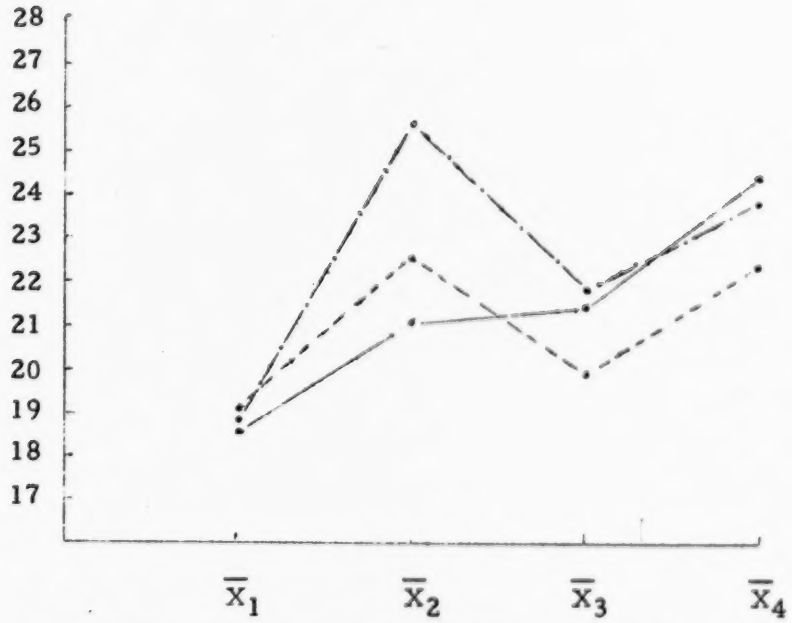

Figure XVI - Kansas Social Interaction Observation Procedure - Verbal Interactions Subject and Peers

Exp. I
Exp. II
Cont.

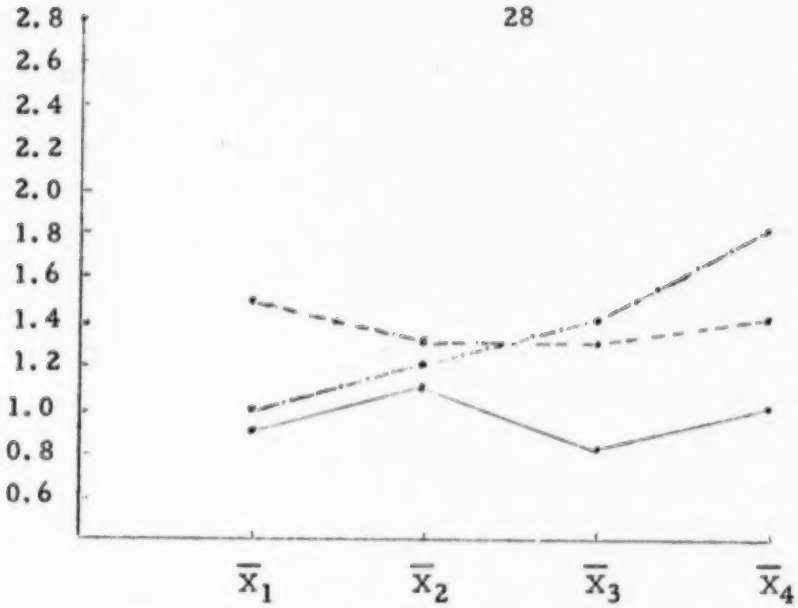

Figure XVII - Kansas Social Interaction Observation Procedure - Non-Verbal Interaction Subject and Adult

Exp. I
Exp. II
Cont.

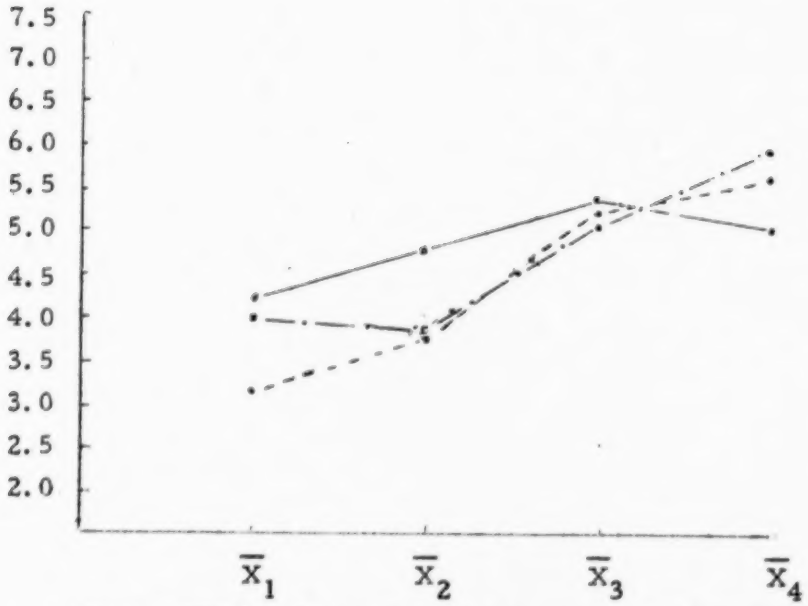

Figure XVIII - Kansas Social Interaction Observation Procedure - Non-Verbal Interactions Subjects and Peers

Exp. I
Exp. II
Cont.

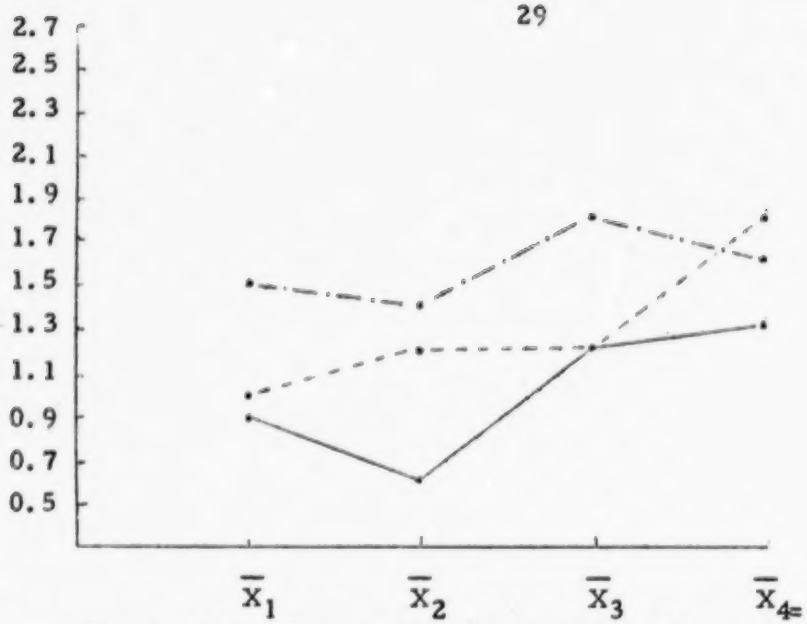

Figure XIX - Kansas Social Interaction Observation Procedure - Verbal and Non-Verbal Interactions Subject and Adult

Exp. I
Exp. II
Cont.

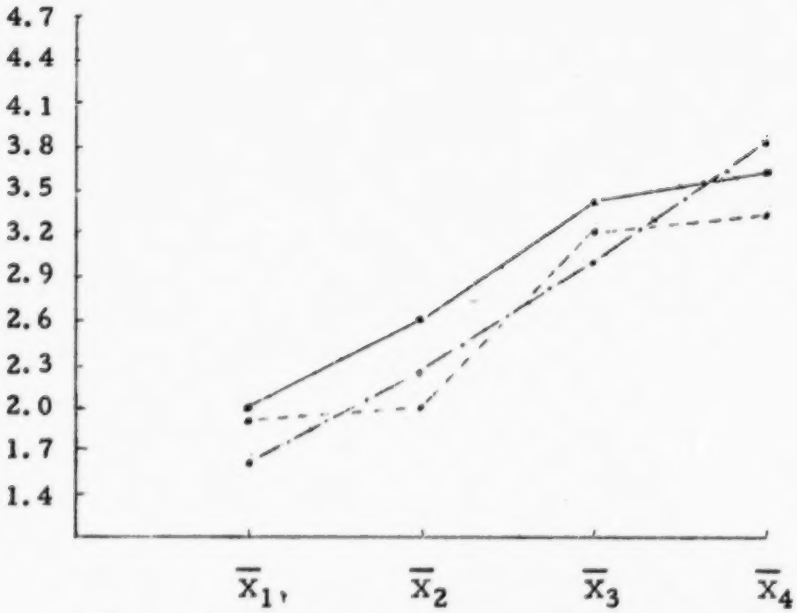

Figure XX - Kansas Social Interaction Observation Procedure - Verbal and Non-Verbal Interactions Subject and Peers

Exp. I
Exp. II
Cont.

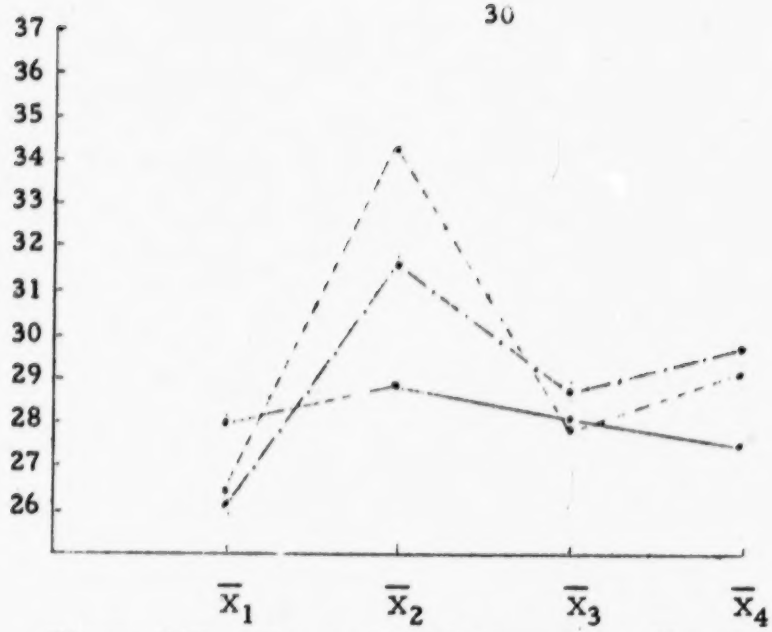

Figure XXI - Kansas Social Interaction Observation Procedure - Total Verbal Interactions

Exp. I
Exp. II
Cont.

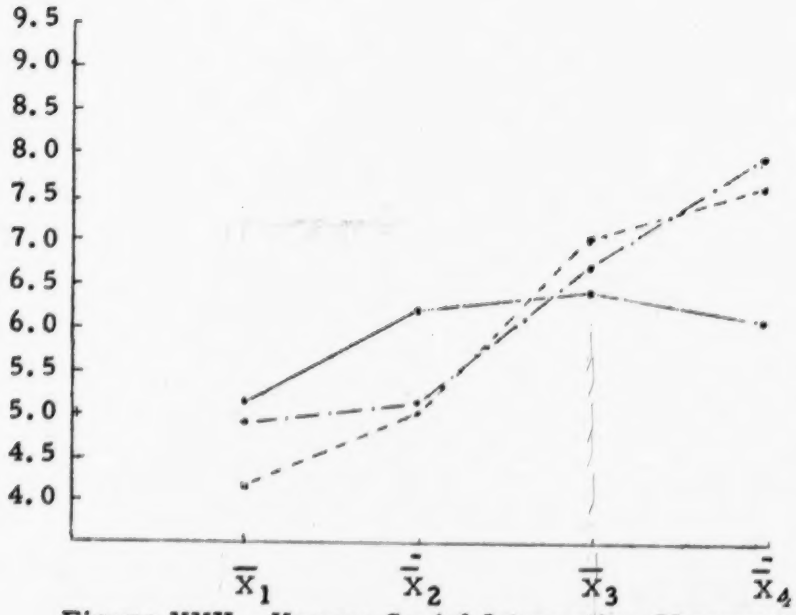

Figure XXII - Kansas Social Interaction Observation Procedure - Total Non-Verbal Interactions

Exp. I
Exp. II
Cont.

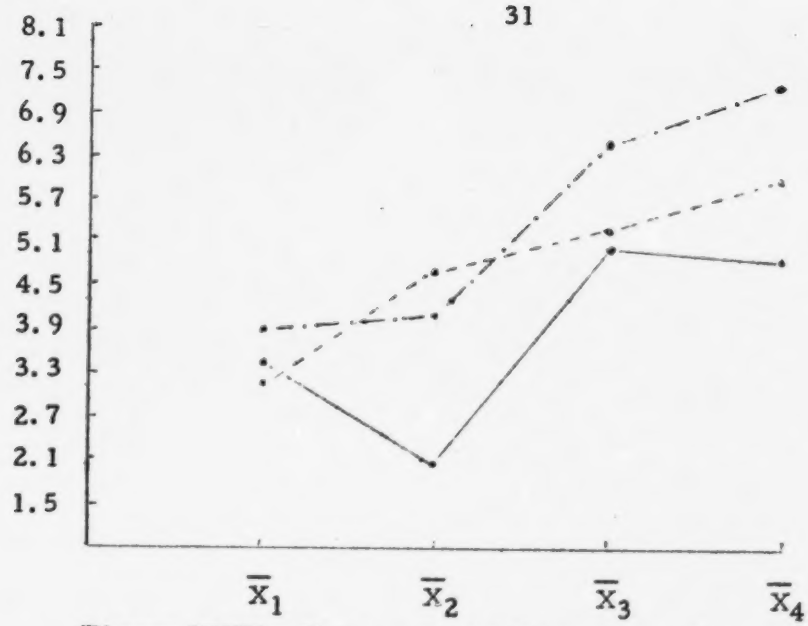

Figure XXIII - Kansas Social Interaction Observation Procedure - Total Non-Verbal and Verbal Interaction

Exp. I
Exp. II
Cont.

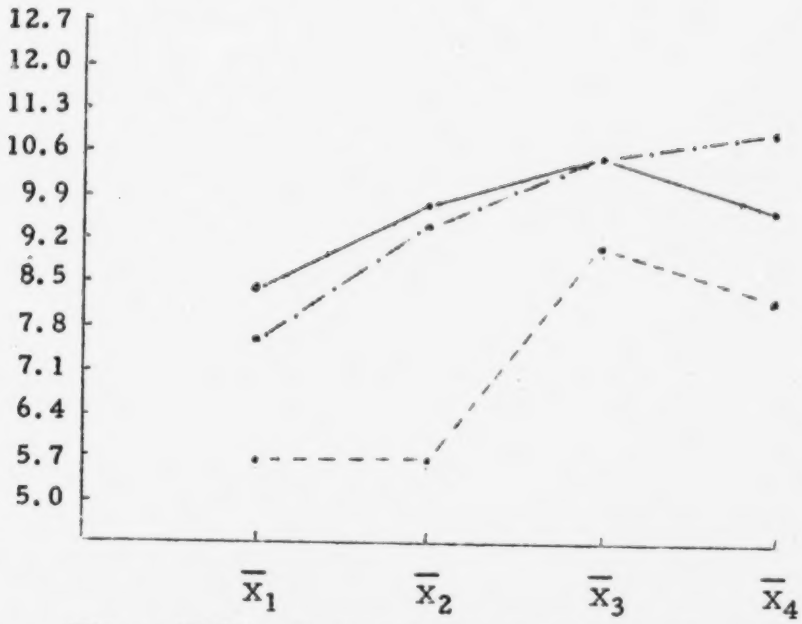

Figure XXIV - Kansas Social Interaction Observation Procedure - Subject and Adult Interaction

Exp. I
Exp. II
Cont.

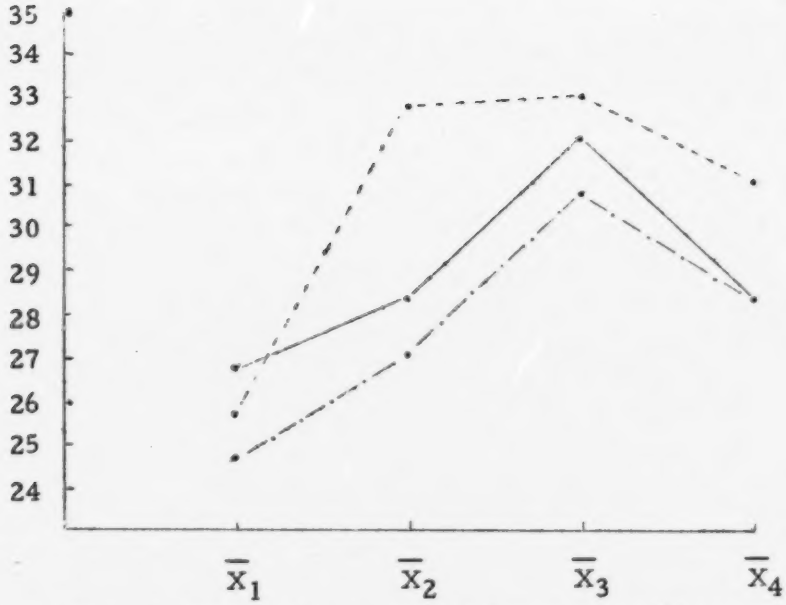

Figure XXV - Kansas Social Interaction Observation Procedure - Subject and Peer Interaction

Exp. I
Exp. II
Cont.

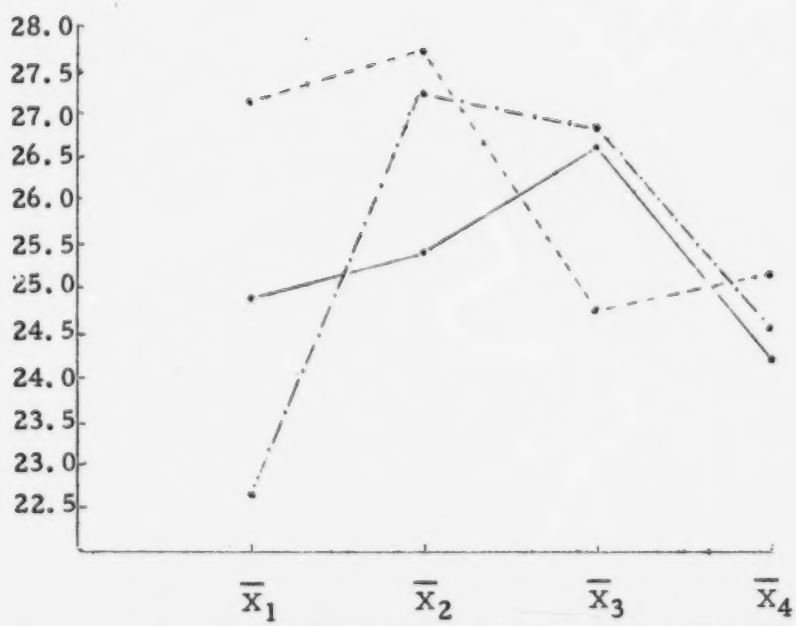

Figure XXVI - Kansas Social Interaction Observation Procedure - Total Verbal Initiations by Subject

Exp. I
Exp. II
Cont.

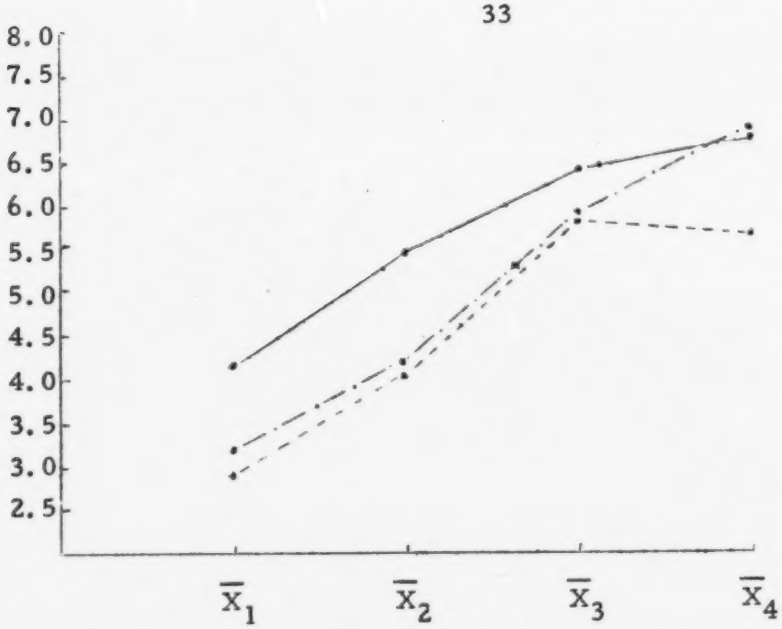

Figure XXVII - Kansas Social Interaction Observation Procedure - Total Non-Verbal Initiations by Subject

Exp. I
Exp. II
Cont.

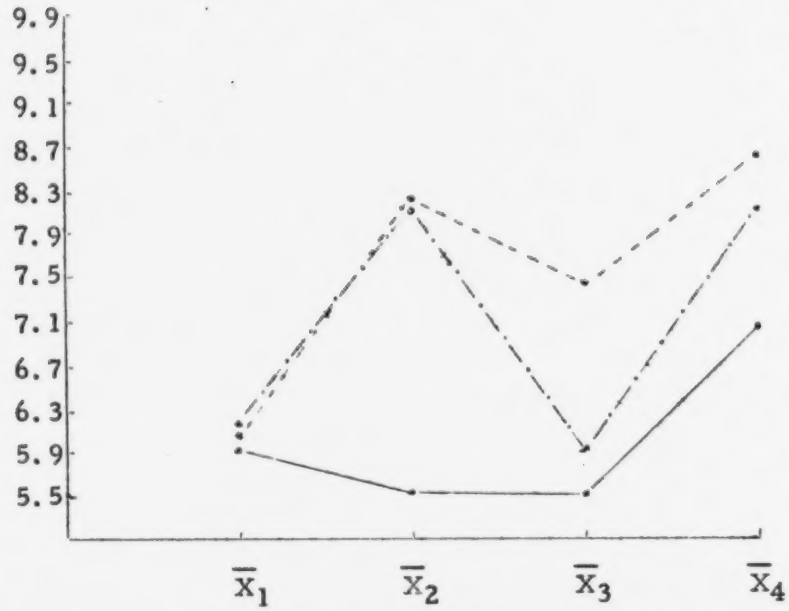

Figure XXVIII-Kansas Social Interaction Observation Procedure - Total Verbal Responses by Subjects

Exp. I
Exp. II
Cont.

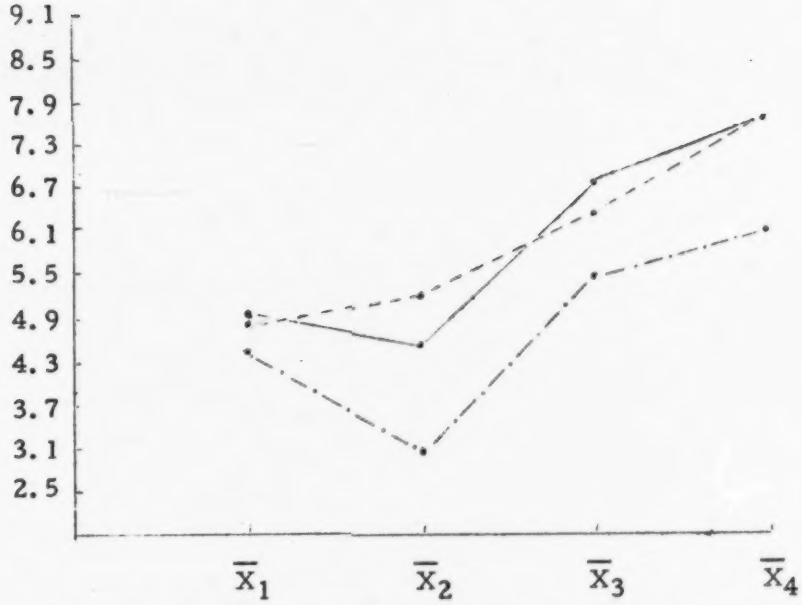

Figure XXIX - Kansas Social Interaction Observation Procedure - Total Non-Verbal Responses by Subjects

Exp. I
Exp. II
Cont.

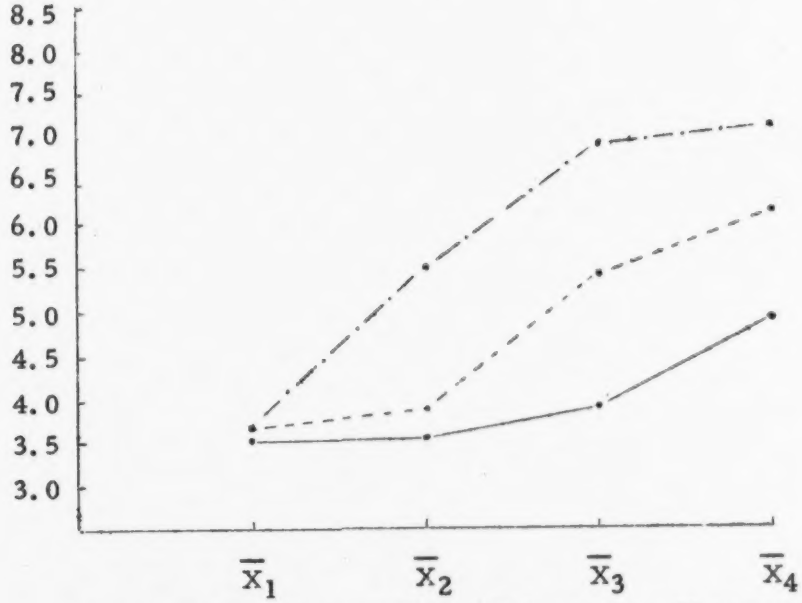

Figure XXX - Kansas Social Interaction Observation Procedure - Subject to Adult Initiations Responded to

Exp. I
Exp. II
Cont.

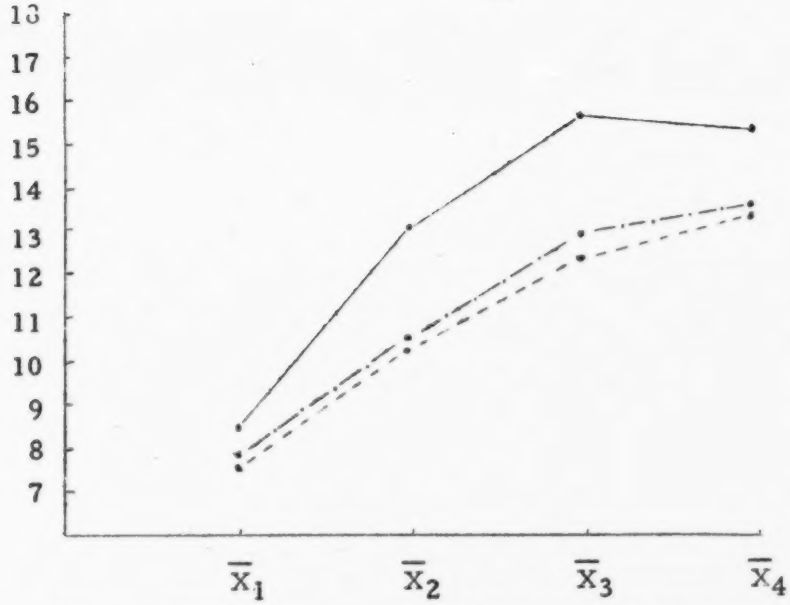

Figure XXXI - Kansas Social Interaction Observation Procedure - Subject to Peer Initiations Responded to

Exp. I
Exp. II
Cont.

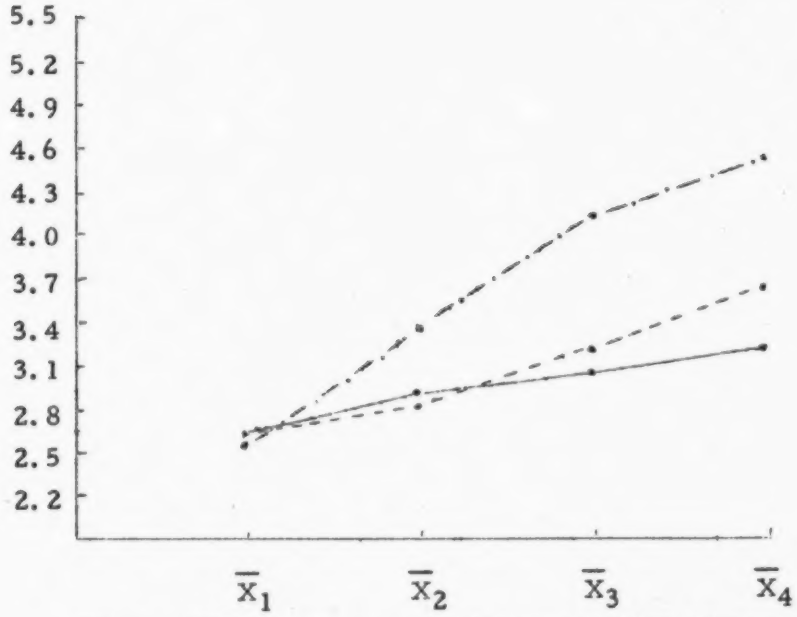

Figure XXXII - Kansas Social Interaction Observation Procedure - Adult to Subjects Initiations Responded to

Exp. I
Exp. H
Cont.

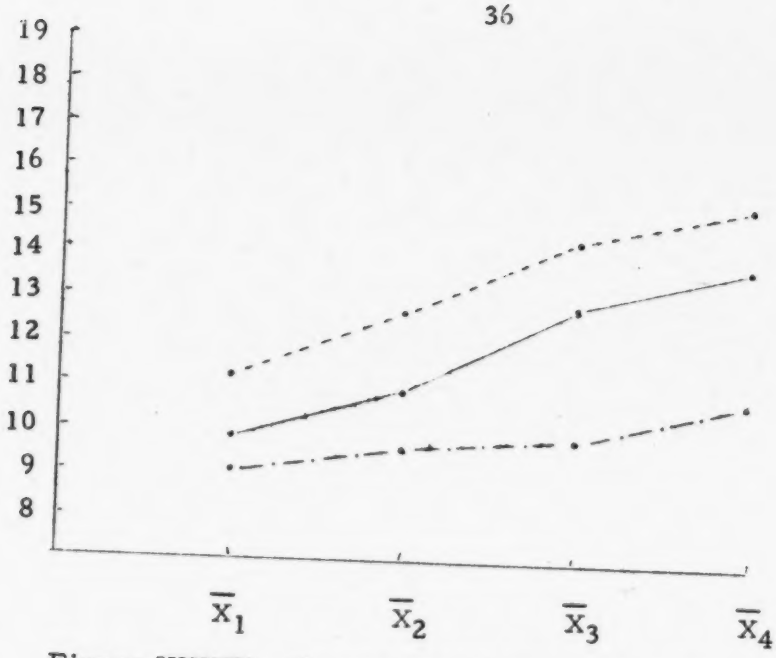

Figure XXXIII - Kansas Social Interaction Observation Procedure - Peer to Subject Initiations Responded to

Exp. I _ . _ . _ . _
Exp. II _ _ _ _ _ _
Cont. _____

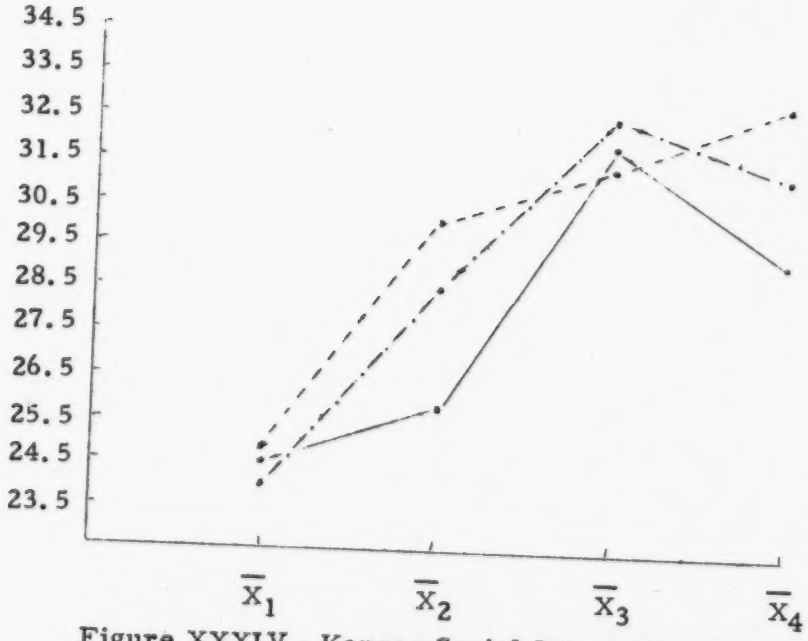

Figure XXXIV - Kansas Social Interaction Observation Procedure - Total Initiations Responded to

Exp. I _ . _ . _ . _ . _
Exp. II _ _ _ _ _ _
Cont. _____

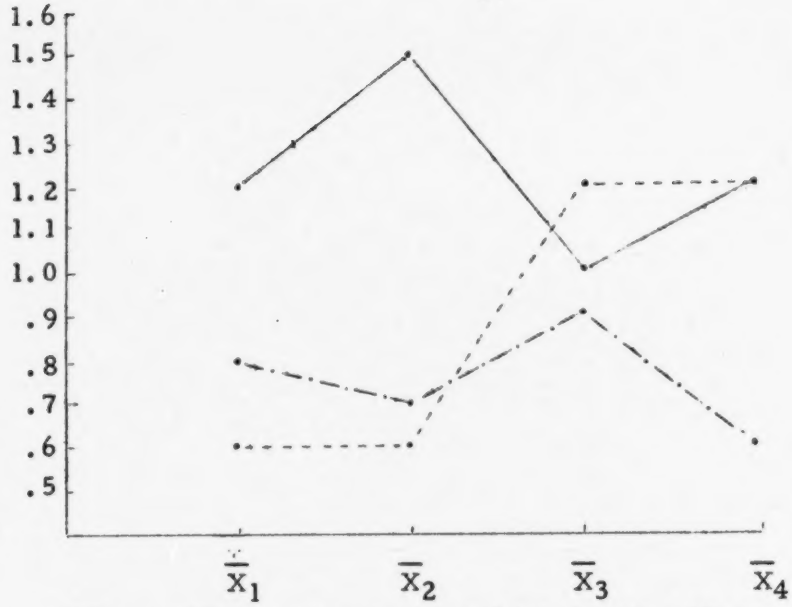

Figure XXXV - Kansas Social Interaction Observation Procedure - Subject to Adult Initiations Not Responded to

Exp. I _ . _ . _
Exp. II - - - - -
Cont. ————

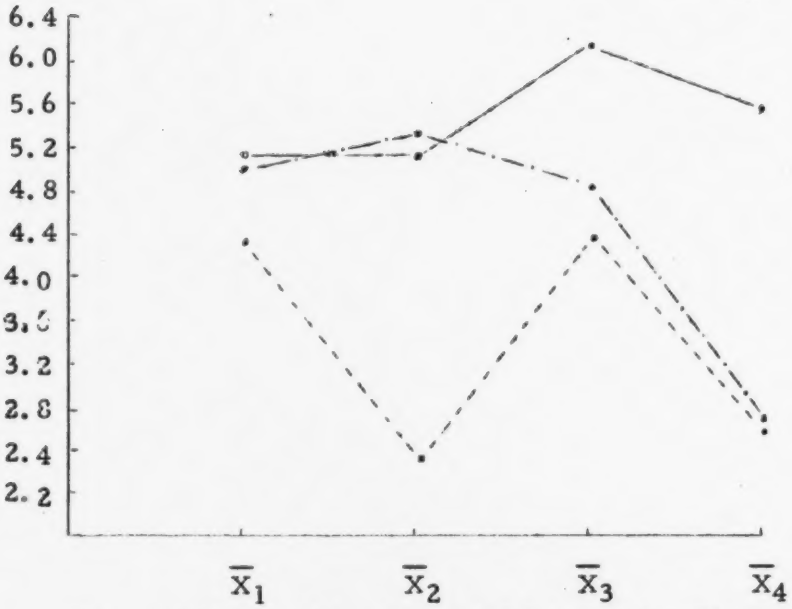

Figure XXXVI - Kansas Social Interaction Observation Procedure - Subject to Peer Initiations Not Responded to

Exp. I _ . _ . _
Exp. II - - - - -
Cont. ————

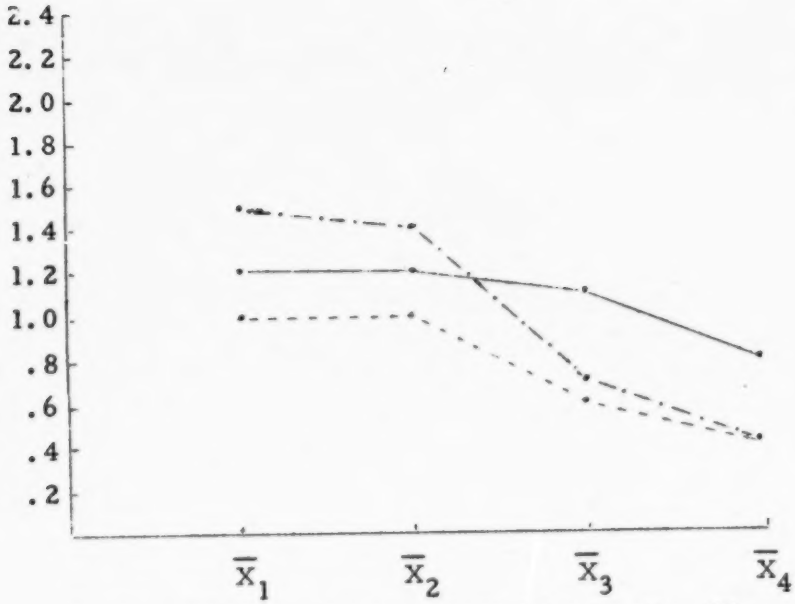

Figure XXXVII - Kansas Social Interaction Observation Procedure - Adult to Subject Initiations Not Responded to

Exp. I _ . _ . _ . _
Exp. II _ _ _ _ _ _
Cont. _____

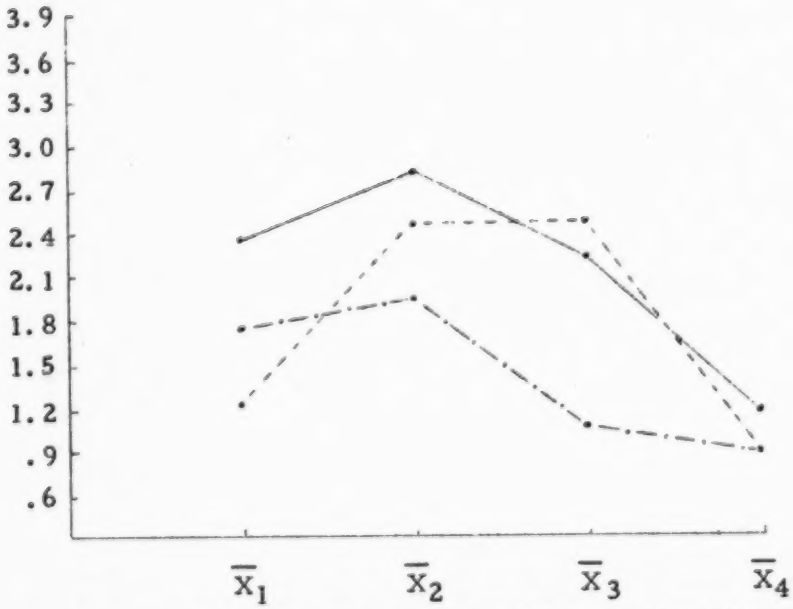

Figure XXXVIII - Kansas Social Interaction Observation Procedure - Peer to Subject Initiations Not Responded to

Exp. I _ . _ . _ . _
Exp. II _ _ _ _ _ _
Cont. _____

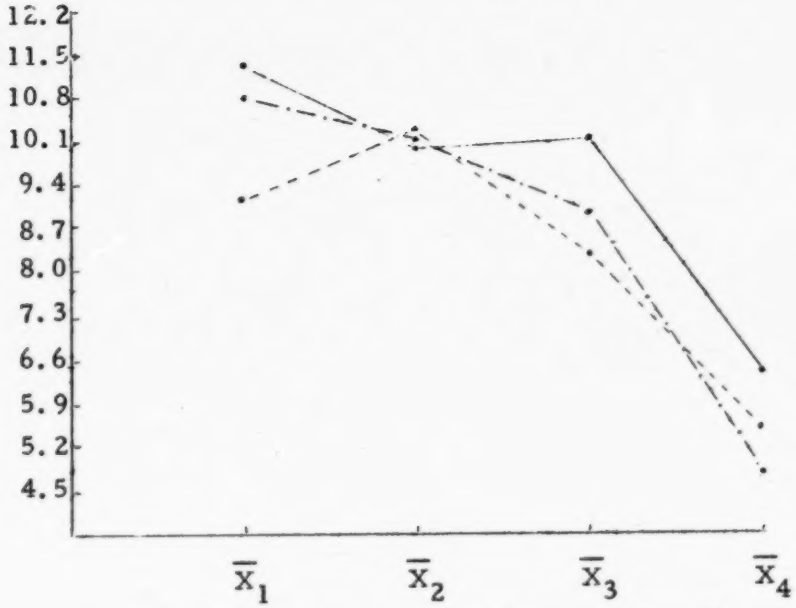

Figure XXXIX - Kansas Social Interaction Observation Procedure - Total Initiations Not Responded to

Exp. I _ . _ . _ . _
Exp. II - - - - - -
Cont. ————

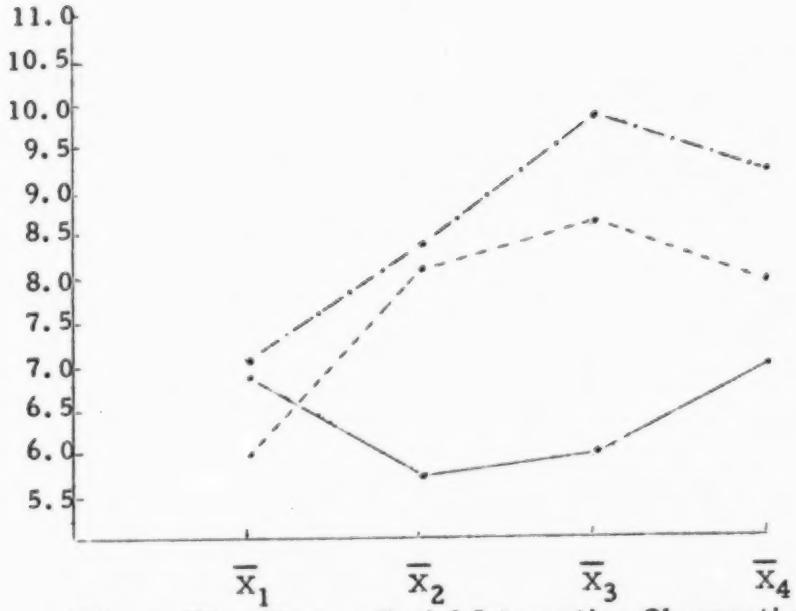

Figure XL - Kansas Social Interaction Observation Procedure - Total Subject to Adult Interaction

Exp. I _ . _ . _ . _
Exp. II - - - - - - -
Cont. ————

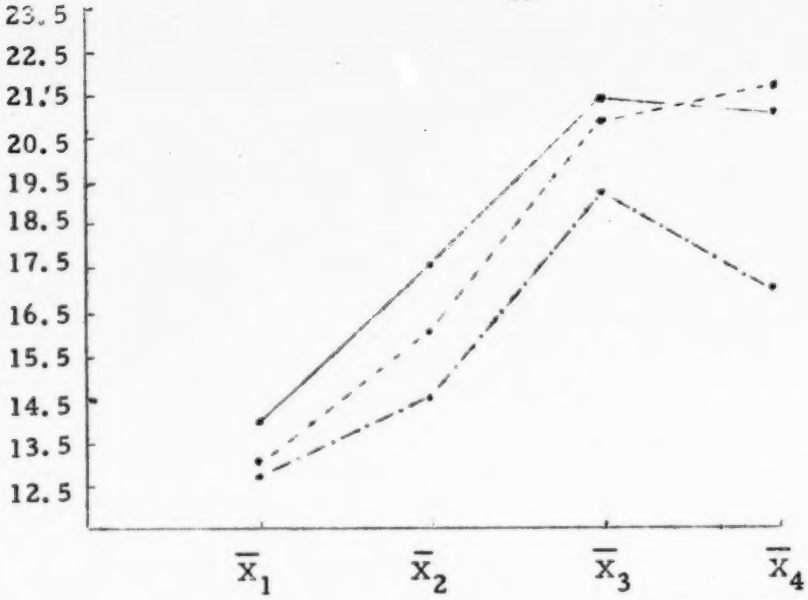

Figure XLI - Kansas Social Interaction Observation Procedure - Total Subject to Peer Interaction

Exp. I
Exp. II
Cont.

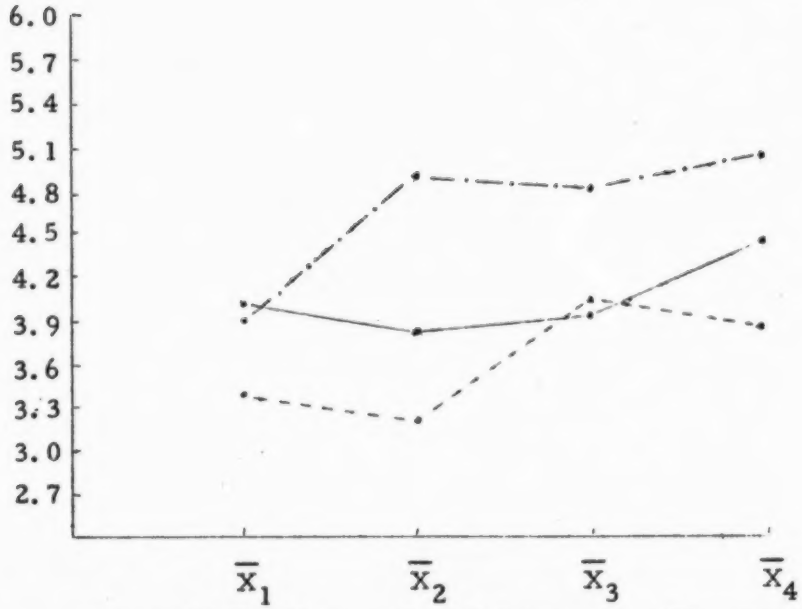

Figure XLII - Kansas Social Interaction Observation Procedure - Total Adult to Subject Interaction

Exp. I
Exp. II
Cont.

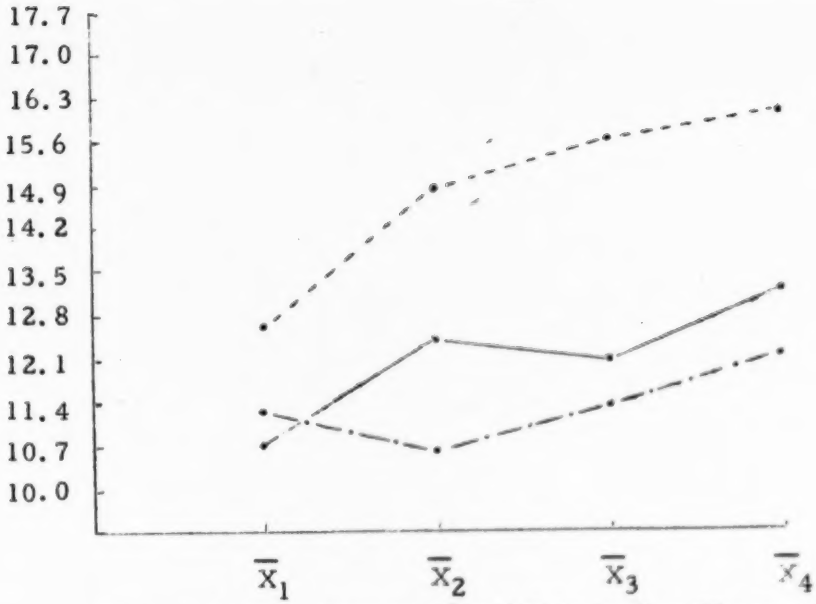

Figure XLIII - Kansas Social Interaction Observation Procedure - Total Peer to Subject Interaction

Exp. I
Exp. II
Cont.

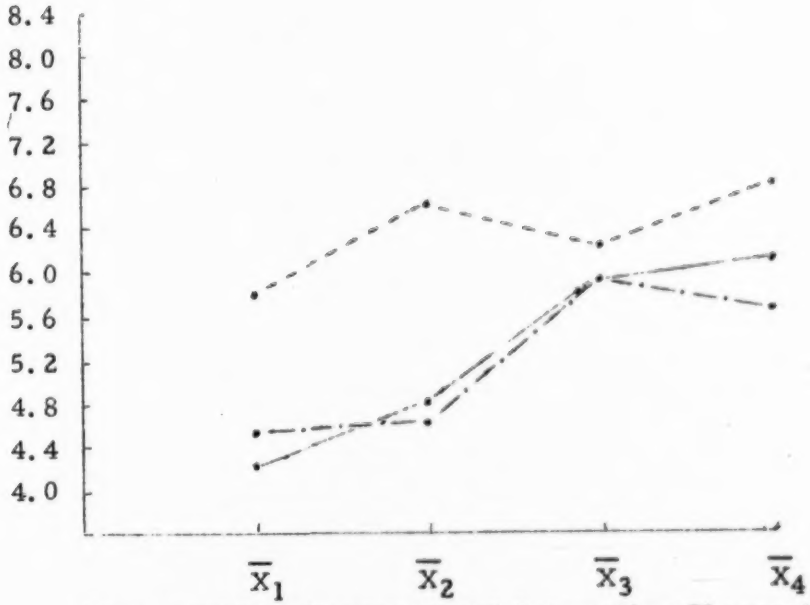

Figure XLIV - Kansas Social Interaction Observation Procedure - Total Interaction Subject to Group

Exp. I
Exp. II
Cont.

for the second year were excluded. The time period between the pre-testing and post-testing therefore ranged from seven to eight and one-half months.

The same instruments that were used for the collection of data on the disadvantaged subject were used in the data collection on the advantaged subjects. Those instruments were the Pre-School Inventory, The Peabody Picture Vocabulary Test, The Cincinnati Autonomy Test Battery, and the Kansas Social Interaction Observation Procedure. The 25 subjects ranged in age from 3 years 8 months to 5 years 6 months at the time of their enrollment. Five of the subjects were between the ages of 3 years 8 months and 4 years of age, 16 were between the ages of 4 years and of 5 years, and four were between the ages of 5 years and 5 years 6 months.

Presented in Table V are the pre-test and post-test means and standard deviations and the t value obtained on the Pre-School Inventory by the advantaged subjects. Also presented in Table V are the pre-test and post-test means and standard deviations and the t value obtained on the Peabody Picture Vocabulary Test. The t value on the Peabody Picture Vocabulary Test was statistically significantly different at the .05 level of confidence.

The means, standard deviations, and t values obtained by the advantaged subjects on the 12 variables measured on The Cincinnati Autonomy Test Battery are shown in Table VI. On none of the 12 variables was there a significant probability value.

Presented in Table VII are the means, standard deviations, and t values on the 30 variables of the Kansas Social Interaction Observation

TABLE V

MEANS, STANDARD DEVIATIONS, AND *t* VALUES: THE PRESCHOOL INVENTORY AND THE PEABODY PICTURE VOCABULARY TEST

Test	Means		Standard Deviation		
	Pre-test	Post-test	Pre-test	Post-test	t
Preschool Inventory	42	48.8	11	10.26	1.90
Peabody Picture Vocabulary Test	98.4	106.1	11.3	8.0	2.16*

*$p > .05$

TABLE VI

MEANS, STANDARD DEVIATIONS, AND *t* VALUES OF THE ADVANTAGED CHILDREN: THE CINCINNATI AUTONOMY TEST BATTERY

Variable	Means		Standard Deviations		
	Pre-test	Post-test	Pre-test	Post-test	t
1. Curiosity	9.3	10.4	4.4	2.0	1.27
2. Innovative Behavior	6.2	5.5	4.8	3.2	- .49
3. Impulse Control	18.9	16.3	15.5	12.3	- .55
4. Reflectivity	6.5	7.5	2.8	2.0	1.23
5. Persistence	1.8	2.5	1.6	1.6	1.48
6. Intentional Learning	3.2	3.8	1.9	1.4	1.07
7. Incidental Learning	22.5	2.4	3.2	1.0	1.98
8. Resistence to Distraction	11.1	12.7	3.1	4.0	.88
9. Field Independence	8.9	9.1	2.9	3.0	.76
10. Task Competence	3.2	3.3	.88	.84	.23
11. Social Competence	3.3	3.4	.57	.55	.68
12. Kindergarten Prognosis	3.3	3.4	.59	.60	.27

TABLE VII

MEANS, STANDARD DEVIATIONS, AND *t* VALUES OF THE ADVANTAGED CHILDREN ON THE KANSAS SOCIAL INTERACTION OBSERVATION PROCEDURE

Variable	Means		Standard Deviations		
	Pre-test	Post-test	Pre-test	Post-test	t
1. Verbal Interaction Subject and Adult	6.9	5.9	3.5	4.3	- .73
2. Verbal Interaction Subject and Peer	17.7	14.5	5.2	5.1	-1.70
3. Non-Verbal Interaction Subject and Adult	.67	.73	.90	1.1	.18
4. Non-Verbal Interaction Subject and Peer	8.4	7.3	3.8	2.9	- .91
5. Verbal and Non-Verbal Interaction - Subject and Adult	1.1	1.6	1.1	1.7	.88
6. Verbal and Non-Verbal Interaction - Subject and Peers	4.5	4.3	2.5	2.2	- .23
7. Verbal and Non-Verbal Interaction - Subject and Adult	20.3	24.6	5.9	5.9	1.97
8. Verbal and Non-Verbal Interaction - Subject and Peer	7.6	9.1	3.6	3.6	1.10
9. Total Non-Verbal and Verbal Interaction	5.6	5.9	2.6	3.5	.24
10. Subject and Adult Interaction	8.7	8.2	4.2	5.9	- .28
11. Subject and Peer Interaction	30.4	26.0	6.9	7.0	-1.72
12. Total Verbal Initiations by Subject	20.2	26.1	6.2	6.0	2.66*
13. Total Non-Verbal Initiations by Subject	9.4	9.0	3.8	3.8	- .28
14. Total Verbal Responses by Subject	5.8	6.0	3.2	2.6	.19

TABLE VII (Con't.)

Variable	Means		Standard Deviations		
	Pre-test	Post-test	Pre-test	Post-test	t
15. Total Non-Verbal Responses by Subject	8.4	7.2	2.7	4.2	- .93
16. Subject to Adult Initiations Responded to	5.5	5.2	4.0	4.7	- .20
17. Subject to Peer Initiations Responded to	16.8	13.8	4.4	4.3	-1.89
18. Adult to Subject Initiations Responded to	2.9	2.1	1.7	2.1	-1.17
19. Peer to Subject Initiations Responded to	9.9	8.9	4.5	4.8	- .54
20. Total Initiations Responded to	30.3	35.8	8.2	5.3	2.17
21. Subject to Adult Initiations Responded to	.67	.73	2.0	1.0	.20
22. Subject to Peer Not Resp. to	2.9	5.5	1.8	1.8	3.90**
23. Adult to Subject Initiations Not Responded to	.27	.27	.46	.46	.00
24. Peer to Subject Initiations Not Responded to	.80	2.1	1.1	1.3	2.86**
25. Total Initiations Not Resp. to	4.7	8.4	2.5	1.5	4.92**
26. Total Subject to Adult Interaction	6.1	5.9	4.2	5.2	- .12
27. Total Subj. to Peer Interaction	22.7	16.7	5.1	5.1	-3.22**
28. Total Adult to Subject Interaction	3.2	2.5	1.8	2.0	-1.05
29. Total Peer to Subj. Interaction	12.8	9.9	4.9	4.9	-1.64
30. Total Interaction Subject to Group	3.3	7.3	2.1	3.5	3.74**

* $p > .05$

** $p > .01$

Procedure. On 15 of the 30 variables, negative *t* values were obtained although none were statistically significantly different. Of the remaining 15 variables on which positive *t* values were obtained, seven yielded significant probability values beyond the .05 level of confidence. Four of the seven yielded significant probability values beyond the .01 level of confidence.

CHAPTER III

RESULTS AND CONCLUSIONS

Introduction

The purpose of this chapter is to discuss the results and draw conclusions from the data collected as related to the purposes of the study. As was stated in Chapter I, the study centered around two major purposes: 1) to ascertain the effects of socioeconomic mix on the disadvantaged children as determined over a two-year period, and 2) to evaluate the effects of socioeconomic mix on the advantaged children. This chapter is therefore divided into two sections: 1) Discussion of Results, and 2) Conclusions.

DISCUSSION OF RESULTS

The Preschool Inventory and the Peabody Picture Vocabulary test are both measures of cognitive development, and in the initial phase of the study (the first two testing periods) a significant probability value was noted on the Preschool Inventory in favor of the two experimental groups. No differences were found on the Peabody Picture Vocabulary Test. An examination of Tables I and II shows that the experimental groups continued over the two-year period to have gained more than the control group. The overall gain for Experimental I Group over the two-year period was 18.4 points while Experimental II Group showed a net gain of 17.8 points. The Control

Group showed a gain of 14.6 points which indicated that Experimental I Group gained nearly one-half a standard deviation over the Control Group. The net gain by Experimental II Group over the Control Group was slightly less.

The net gain over the two-year period by Experimental I Group on the Peabody Picture Vocabulary Test was 19.7 points; Experimental II Group, 11.9 points; and the Control Group 13.4 points. Experimental I Group showed the greatest gain while the Control Group showed the second greatest gain. However, for the Experimental II Group, subjects which remained in the program for the two-year period performed at a higher level on the initial test by nearly one-half a standard deviation. A comparison of Experimental I Group and the Control Group showed that their initial performance was only 1.5 points apart in favor of Experimental I Group. The net gain of Experimental I Group was nearly 1.5 standard deviations while the Control Group gained a net of .75 of a standard deviation.

With only one exception, the mean scores did not change as much during the summer months as they did during the fall and winter months and this reflects the fact that some of the subjects were not enrolled during the summer months. Furthermore, it is the opinion of the researchers that the final scores are somewhat inflated and do not reflect accurately the intelligence level of the subjects because they had been exposed to the instruments four times. However, based on the data collected over the two-year period, the experimental groups in general experienced greater gains than did the control groups, with the one exception identified in the above

paragraph.

The data collected on the 12 variables included in the Cincinnati Autonomy Test Battery yielded some rather interesting, and in some instances confusing results. On the curiosity variable which yielded no significant differences in the original study, showed that over the two-year period the three groups had reached similar levels of functions. However, the Control Group showed the greatest gain for this group, was considerably below the performance level of the experimental groups (5.6) on the initial testing.

The variable, innovative behavior, showed remarkable similarities between the two experimental groups and quite the opposite for the control group. The two experimental groups showed rather significant gains during the fall and winter months and slight declines during the summer months, while the Control Group showed gains during the summer months and a slight decline during the winter months. The final testing period showed the experimental groups to be performing at a considerably higher level than the Control Group.

The motor impulse control variable is one of those variables which yield rather confusing results. First, those subjects included in the control group were not representative of the total number of subjects included in the original study and as a consequence, their mean score performance on the initial test was significantly less than any of the three groups. Even so, the Control Group showed a very slight decline in score, which means greater control between the first two testing periods. During the time period

between the second and third testing, they showed such increases in scores that they surpassed Experimental I Group and was functioning essentially at the same level as Experimental II Group. And on the final test performance showed a much larger mean score than either of the two experimental groups. Because of these factors, the reliability of the data on this variable is open to question.

On the reflectivity variable all three groups demonstrated a continued improvement over the two-year period. The greater gains, however, occurred during the winter months with very little improvement noted during the summer months. The data collected on the persistence variable, which in some ways is similar to the reflectivity variable shows a more complex pattern. The two experimental groups showed gains during the winter months with a slight decline during the summer months for Experimental I Group and a slight increase during the summer months for Experimental II Group. On the other hand, the Control Group manifested its greatest gain during the summer months and either showed a slight decline or no increase during the winter months. It is unlikely that the changes occurring on this variable can be attributed to socioeconomic mix.

Performances on the intentional and incidental learning variables show that all three groups made very little gain over the two-year period on either variable. However, it should be noted that considering the range of scores obtainable on these two variables, that all three groups were performing at a relatively high level on the final testing.

The two experimental groups demonstrated superior performance when compared to the Control Group in resisting distractions during the testing periods. With the one exception of Experimental II Group during the summer months, there was a steady increase by both groups over the two-year period. The Control Group, however, showed a decrease or very little gain during the winter months and showed considerable gain over the summer months. On the final test performance the experimental groups manifested superior performance to the Control Group.

Only minor differences were noted on the field independence measure when the three groups were compared over the two-year period. However, it should be noted that practically all the gains obtained by all three groups were during the first seven months of the study. During the second year or during the summer months small gains and in some instances decreases in performance were found.

The experimental groups as well as the Control Group showed fairly similar final performances on the task competency and social competency variables. Experimental II Group demonstrated the greatest gain over the two-year period, while Experimental I Group demonstrated the highest performance level on the final testing on the task competency variable. The same conditions were noted on the social competency variable as well.

Performances by the three groups on the kindergarten prognosis variable showed the two experimental groups to be demonstrating at a higher level than the Control Group. Inasmuch as the highest score obtainable on this variable is four, both the experimental groups showed a readiness for

kindergarten work not demonstrated by the Control Group. Experimental II Group demonstrated the greatest gains on this variable as well as the highest performance level on the final testing period.

The Kansas Social Interaction Observation Procedure was the instrument utilized in this study to provide data in measuring socialization. Although the instrument provides data on 30 variables, they may be grouped for interpretation into two categories: 1) Verbal and non-verbal interactions between subject and adult, and 2) Verbal and non-verbal interaction between subject and peers. The first category is covered by variables 1, 3, 5, 10, 16, 18, 21, 23, 26, and 28. The second category includes variables 2, 4, 6, 11, 17, 19, 22, 24, 27, and 29. Variables 7, 8, 9, 12, 13, 14, 15, 20, 25, and 30 are measures within both of the categories identified above.

In the initial phase of the study, the pattern relating to the nature and frequency of interactions between subject and adult which showed a significantly greater interaction by the experimental groups was born out over the two-year period. The two experimental groups showed rather large increases in frequencies of interaction with adults during the winter months and slight declines during the summer months. The Control Group showed a consistently gradual and slight decline over the two-year period (Figure XV). The final performances by the three groups showed that the experimental groups had progressed significantly more than the Control Group in this category.

On the second broad category which includes the interactions between

subject and peers, the Control Group and Experimental II Group continued to show greater frequency of interactions when compared to Experimental I Group as was noted in the initial phase of the study. However Experimental I Group showed steady increases over the two-year period reducing the differences that existed through the first year.

Of particular concern in this phase of the study which was not included in the first study, was what effect did the socioeconomic mix have on the advantaged children. On both the Preschool Inventory and the Peabody Picture Vocabulary Test the advantaged showed gains between the pre-test and post-test and the gain was significant beyond the .05 level of confidence on the Peabody Picture Vocabulary Test.

Of the 12 variables on the Cincinnati Autonomy Test Battery, only on one variable innovative behavior, did the advantaged subjects show a decline in performance. The impulse control variable showed a negative value which meant improvement. There were no significant differences at the .05 level of confidence on any of the variables.

The Kansas Social Interaction Observation Procedure which yields measures on 30 variables across two basic dimensions: subject and peer interactions and subject and adult interactions, yielded some rather interesting findings. Examining those variables which dealt with subject-peer interactions showed that the advantaged subjects declined in the frequency of their interactions with their peers. For examples, variable 2 which measured verbal interactions subjects and peers, yielded a negative $\underline{t}$ value of -1.70; variable 17 which measured subject to peer initiations responded to yielded

a negative value of -1.89; variables 22 and 24 which measured peer to subject initiations not responded to and subject to peer initiations not responded to respectively, yielded positively significant t values of 2.17 and 3.9. It would be of interest to be able to determine to what degree the interactions occurring were advantaged subjects with advantaged subjects and disadvantaged subjects. The number of subjects in the area where the testing occurred, prohibited classifying the data in this manner.

There were only minor changes when comparing the pre-test data with the post-test data on those variables measuring subject and adult interactions. Variables 1, 10, 16, 18, 26, and 28 showed slight declines, while variables 3, 5, 7, and 21 showed slight increases.

The data showed that the advantaged subjects increased their verbal interactions and decreased in non-verbal interactions as is measured by variables 12, 13, 14, and 15.

CONCLUSIONS

There were two major questions with which the study was concerned. The first was would the conclusions which were drawn in the initial phase of the study (the first year, September, 1970, through May, 1971) sustain and hold true over a two-year period or would the data indicate a leveling off and the progress made over a two-year period negate the first year gains which were in favor of the experimental groups, i.e., socioeconomic mix. The second concern was one which was not considered in the initial study but is of

real importance in implementing socioeconomic mixes in preschool programs aimed primarily at the disadvantaged, was what effects occur on the advantaged children who become a part of the socioeconomic mix in these classrooms?

There are several limitations in field research of this nature, namely; 1) the difficulty in maintaining a satisfactory number of subjects over a two-year period, 2) the turnover in teaching personnel over a two-year period, and 3) increments gained on tests with which the subjects become intimately familiar after being exposed to them four times. Even with these limitations, however, the data tended to support the value of socioeconomic mix in preschool classrooms and in some ways made the support for such classroom compositions even stronger.

Those conclusions which were drawn in the initial phase of the study and examined for a second year were:

1. Socioeconomic mix has a positive effect upon the cognitive development of disadvantaged, with less positive effects on verbal skills than other areas of cognitive development. This observation was supported in the second year of the study, in that, the subjects in the Experimental I group showed a net gain of 19.6 points on the Preschool Inventory, the Experimental II group showed a net gain of 17.8 points, while the Control group showed a net gain of 14.6 points which is 3.2 points less than the Experimental II group and 5 points less than the Experimental I group. The Peabody Picture Vocabulary Test which relies more on verbal skills than other cognitive skills showed net gains of 19.7 points for the Experimental I group, 11.7 points for the

Experimental II group, and 13.4 points for the Control Group. However, it should be noted that the Experimental II group ranged at least 7 points higher on the initial test which may account for this group demonstrating the smallest gain. The data obtained on the Cincinnati Autonomy Test Battery also continued to support this conclusion because those variables which did not rely as heavily on verbal skills showed support for the experimental groups while those variables which relied more heavily on verbal skills did not.

2. As the level of socioeconomic mix increases there is an increase in interactions between the subject and adults and a decrease in interactions between subject and peers. Although the first part of this observation, i.e., increases in interactions between subjects and adults, was born out over the two-year period, the second part (decreases in interaction between subject and peers) is open to question. The two experimental groups tended to manifest almost as much interaction with peers as did the Control group on the final testing. However, it should be noted that those subjects in the experimental groups who continued in the second year of the study were not as representative of the experimental groups in the first year as was those subjects who continued in the second year of the study in the control group.

3. As the level of socioeconomic mix decreases there is a decrease in interactions between subjects and adults and an increase in interactions between subjects and peers. This pattern held true, in general in the second year of the study and therefore gives further support to this conclusion.

4. Socioeconomic mix had a positive effect on the social competency of disadvantaged children, i.e., interactions with adults under problem and

stress situations. The second year gave continued support to this conclusion as the experimental groups showed the greatest gains under these conditions as well as demonstrating higher performance levels on the final test results.

5. Data were inconclusive to give support to a preferred level of socioeconomic mix as being superior. This conclusion was still warranted when the second year data were analyzed. It would appear that the bases for making decisions as to the level of socioeconomic mix, if the minimum is at least a 75-25 disadvantaged-advantaged ratio, will be determined by other factors than research, such as economic factors, disadvantaged populations, etc.

6. The data obtained on the advantaged children showed that they profited from such experiences discounting the concern that they would be negatively effected under such conditions.

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APPENDIX

Cincinnati Autonomy Test Battery (CATB)

Kansas Social Interaction Observation Procedure

Analysis of Verbal Responses

Modified CATB

Record Booklet

Child's Name_____ Tester_____

School_____ Experimental-Control (Circle)

Address_____ Phone_____ Sex_____ Race___

Date of Test_____ yr. _____ mo. _____ day

Child's Birthdate_____

Age _____

Add one month if 15 days or more

Age in months_____

Child's Name_____ Proto. #_____

Task Initiation: (Circle proper rating)

1. No initiation. Child sat with hands in lap and watched E. Child sat and looked about the room.

2. Minimal contact: No real involvement is shown - child touched figures but withdrew. Child knocked figure down and immediately withdrew.

3. Initiation but minimal involvement. Child moves figures about randomly but no organization. Child lays all figures down - no systematic play.

4. Initiation - high degree of involvement, organized activity. Child pairs all animals or stands them side by side. Child groups figures and puts them inside barricade. Child puts figures on top of one another.

Curiosity Box

	Activity							Verbalization			
								Box Related		Other	
Time	Manip. Explor.	Tact. Explor.	Visual Explor.	Other	Move Subj.	Move Box	Time	Quest. &/or Comm.	Fantasy	Quest. &/or Comm.	Fantasy
.50	me	te	ve	other	m-s	m-b	.50	q &/c	fan	q &/c	fan
1.00	me	te	ve	other	m-s	m-	1.00	q/c	fan	q/c	fan
1.50	me	te	ve	other	m-s	m-b	1.50	q/c	fan	q/c	fan
2.00	me	te	ve	other	m-s	m-b	2.00	q/c	fan	q/c	fan
2.50	me	te	ve	other	m-s	m-b	2.50	q/c	fan	q/c	fan
3.00	me	te	ve	other	m-s	m-b	3.00	q/c	fan	q/c	fan
3.50	me	te	ve	other	m-s	m-b	3.50	q/c	fan	q/c	fan
4.00	me	te	ve	other	m-s	m-b	4.00	q/c	fan	q/c	fan
4.50	me	te	ve	other	m-s	m-b	4.50	q/c	fan	q/c	fan
5.00	me	te	ve	other	m-s	m-b	5.00	q/c	fan	q/c	fan

Child's Name: _____

Impulse Control

Fast line (training)

Total Length _____

Total Time _____

Aver. in/.01 min. _____

Slow line #1
Time: _____
Length: _____
In. /.01 min. _____

Slow line #2
Time:_____
Length:_____
In. /.01 min._____

Slow line #3
Time: _____
Length: _____
In. /.01 min. _____

Child's Name _____ September 1966

Incidental Learning

Incidental Recall	Labeling	Post-familiarization Recall
	T1 Table	
	T2 House	
	T3 Apple	
	1. Dog	
	2. Girl	
	3. Wagon	
	4. Airplane	
	5. Telephone	
	6. Bed	
	7. Shoe	
	8. Car	
	9. Hat	
	10. Boat	
Total		Total

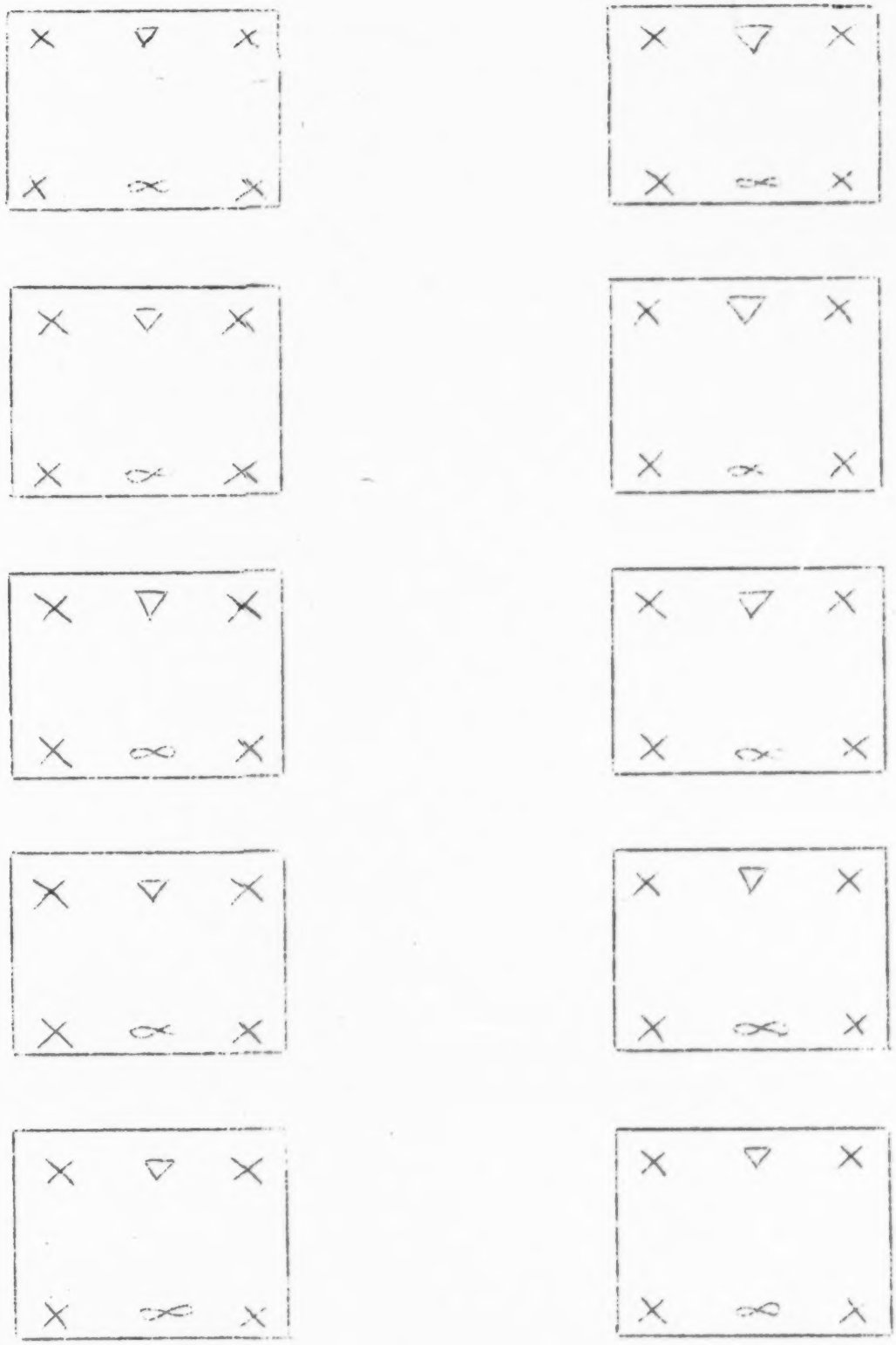
Irrelevant Responses

Irrelevant Responses

Child's Name_____

Response Variability

Score (no. of diff. Ways)_____



EC = EFT Early Childhood - Embedded Figures Test

1	2	3	4	5	6	7	8	9	10	11	12	13	14
mt.	lamp	c-boy	tree	man	clock	train	dino	drum	Indian	geo. 1	geo. 2	geo. 3	geo. 4

Cone Score_____

Puzzle Boards: manipulation board

Revised - August - '67

Activity					Verbalization				
						Board Related		Other	
Time	Manip. Explor.	Other	Move.- Subject	Move.- Boards	Time	Quest. &/or Comment	Fantasy	Quest. &/or Comment	Fantasy
.50	me	other	m-s	m-b	.50	q &/or c	fan	q &/or c	fan
1.00	me	other	m-s	m-b	1.00	q &/or c	fan	q &/or c	fan
1.50	me	other	m-s	m-b	1.50	q &/or c	fan	q &/or c	fan
2.00 Prompt	me	other	m-s	m-b	2.00 Prompt	q &/or c	fan	q &/or c	fan
2.50	me	other	m-s	m-b	2.50	q &/or c	fan	q &/or c	fan
3.00	me	other	m-s	m-b	3.00	q &/or c	fan	q &/or c	fan
3.50	me	other	m-s	m-b	3.50	q &/or c	fan	q &/or c	fan
4.00	me	other	m-s	m-b	4.00	q &/or c	fan	q &/or c	fan
4.50	me	other	m-s	m-b	4.50	q &/or c	fan	q &/or c	fan
5.00	me	other	m-s	m-b	5.00	q &/or c	fan	q &/or c	fan

Early Childhood -- Matching Familiar Figures

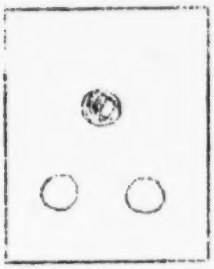
Revised--Summer '67

#1 Circle

#2 Girl

#3 Cat

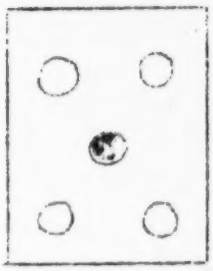
#4 Boy



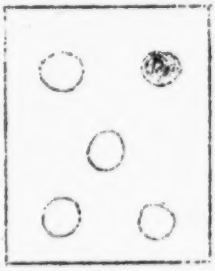
#5 Bunny

Woman - #6 Face

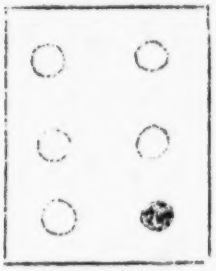
#7 Tree



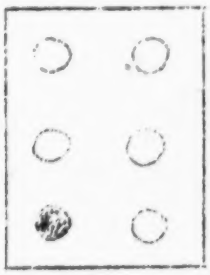
Man - #8 Face



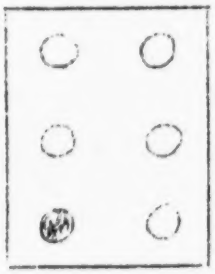
#9 Tractor



Girl - #10 Face



#11 Plane



Boy - #12 Face

Total Correct _____

Replacement Puzzle: Persistence and Persistence After Distraction

Activity						Verbalization				
							Puzzle or Block Related		Other	
Time	Puzzle - Goal Direct.	Puzzle-non Goal Direct	Other	Prompt	Blocks	Time	Ques. &/or Comm.	Fantasy	Ques. &/or Comm.	Fantasy
.33	pgd	pngd	other	p		.33	q &/or c	fan	q &/or c	fan
.66	pgd	pngd	other	p		.66	q &/or c	fan	q &/or c	fan
1.00	pgd	pngd	other	p		1.00	q &/or c	fan	q &/or c	fan
1.33	pgd	pngd	other	p		1.33	q &/or c	fan	q &/or c	fan
1.66	pgd	pngd	other	p		1.66	q &/or c	fan	q &/or c	fan
2.00	pgd	pngd	other	p		2.00	q &/or c	fan	q &/or c	fan
2.33	pgd	pngd	other		blks	2.33	q &/or c	fan	q &/or c	fan
2.66	pgd	pngd	other		blks	2.66	q &/or c	fan	q &/or c	fan
3.00	pgd	pngd	other		blks	3.00	q &/or c	fan	q &/or c	fan

Tester's Ratings

Child's Name _____ Tester's Name _____ School _____ Date _____

Task Competence Rating	5 Optimal	4 Good	3 Average	2 Fair	1 Poor	
Absorbed by Task						Easily distracted
Persistent						Gives up easily
Eager to continue						Seeks to terminate
Challenged by hard tasks						Prefers only easy tasks
Social Competence Rating						
Socially confident						Shy, reserved, reticent
Comfortable in adult company						Ill at ease
Assured						Anxious about success
Needs minimum of commendation						Needs constant praise and encouragement
Kindergarten Prognosis						
Good conventional kindergarten prognosis						Poor conventional kindergarten prognosis

SOCIAL INTERACTION OBSERVATION FORM

and R.	Center	Class	Obser.	Date	Session	Week of Center Operat
					AM PM	

Minute 1				Minute 2				Minute 3			
ld No.	Letter	Time	Activity								
ld No.	Letter	Time	Activity								
ld No.	Letter	Time	Activity								
ld No.	Letter	Time	Activity								

	A_6	A_{11}
	A_7	A_{12}
	A_8	A_X
	A_9	A_X
	A_{10}	A_X

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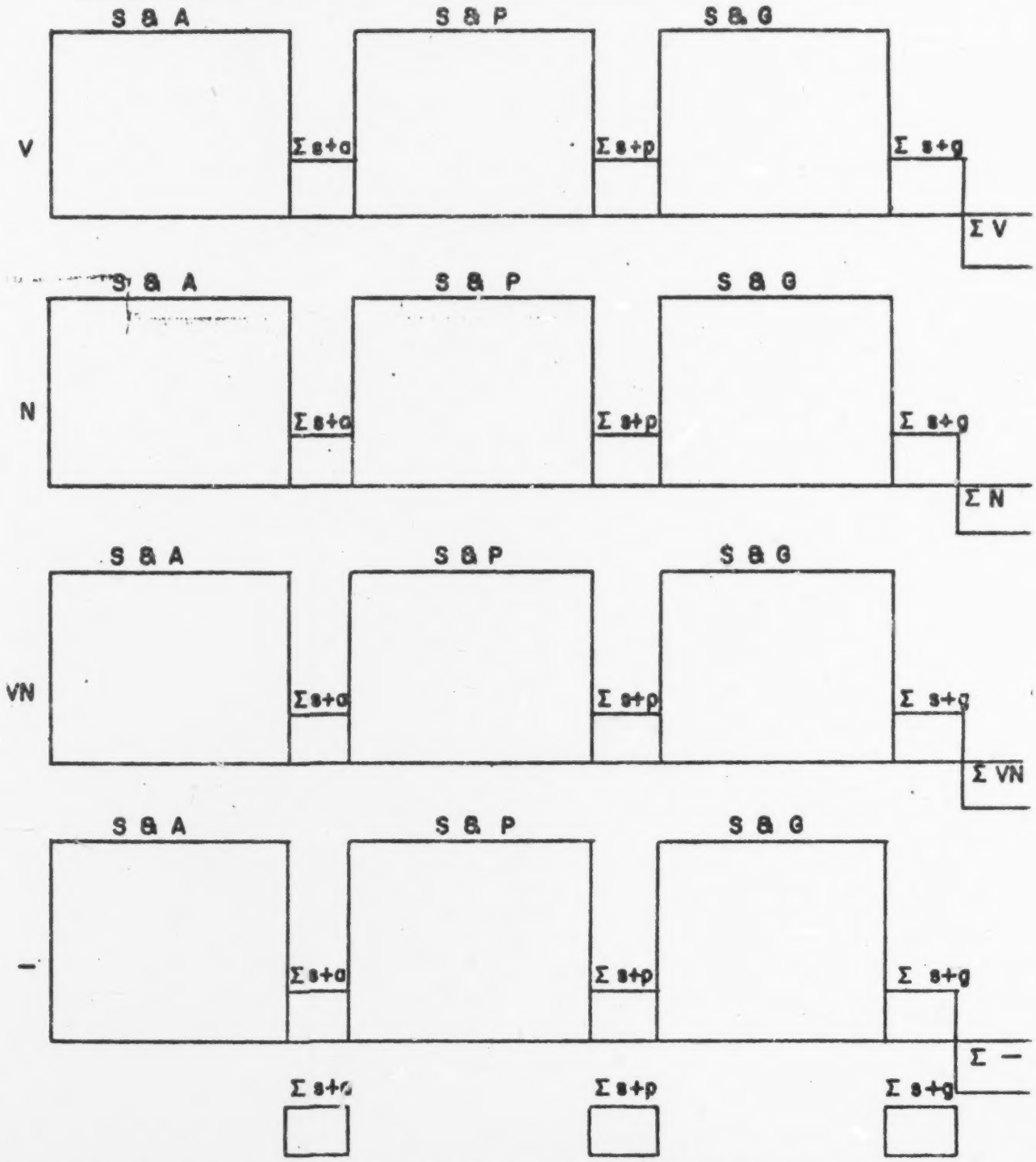
Interaction --- Master Data Form I

Circle when tallied and enter week of center operation in block below.

3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	min.



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Verbal and Nonverbal Behavior -- Master Data Form II

Circle when tallied and enter week of center operation in block below.

3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	min.

INITIATION			RESPONSE			
Verbal	Nonverbal	✓	Verbal	Nonverbal	✓	⊘
T						

Total Verbal Behavior (IV + RV + ✓ + ⊘) =

Total Nonverbal Behavior (IN + RN) =

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Interaction with Specified Individuals and Groups
Master Data Form V

Circle last tallied minute

3 6 9 12 15 18 21 24 27 30 33 36 39 42 45 min

By S to Adults

Initiations ≤V ≤N ≤X Duration ≤V ≤N ≤X

A

By Adults to S

Initiations ≤V ≤N ≤X Duration ≤V ≤N ≤X

A

Following are Completed Interactions Only

SO-Other Response

Initiations ≤V ≤N ≤X Duration ≤V ≤N ≤X

OS-S Response

Initiations ≤V ≤N ≤X Duration ≤V ≤N ≤X

Other-O,S Response

Initiations ≤V ≤N ≤X Duration ≤V ≤N ≤X

Total Adult Initiations =
Total Adult Duration =
Total No. Males Interacted With =
Total No. Females Interacted With =
Total No. Peers Interacted With

Duration with Males =
Duration with Females =
Duration with Peers =
Overall S Duration =

Department of Human Development

Initiations and Responses -- Master Data Form III

Circle when tallied and enter week of center operation in block below.

3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	min.

INITIATION	RESPONDED TO	NOT RESPONDED TO	
SA	Σ	Σ	Σ SA
SP	Σ	Σ	Σ SP
SG	Σ	Σ	Σ SG
AS	Σ	Σ	Σ AS
PS	Σ	Σ	Σ PS
GS	Σ	Σ	Σ GS
AG	Σ	Σ	Σ AG
PG	Σ	Σ	Σ PG
	Σ R	Σ $\overline{R}$	

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Adult Intervention -- Master Data Form IV

Circle when tallied and enter week of center operation in block below.

3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	min

INTERACTION	AV	AN	AVN	
S & P	Σ	Σ	Σ	Σ S & P
S & G	Σ	Σ	Σ	Σ S & G
S & A	Σ	Σ	Σ	Σ S & A
	Σ AV	Σ AN	Σ AVN	

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Interaction with Specified Individuals and Groups
Master Data Form V

Circle last tallied minute
3 6 9 12 15 18 21 24 27 30 33 36 39 42 45 min

By S to Males

Peer	Initiations	ΣV	ΣN	ΣX	Duration	ΣV	ΣN	ΣX
B								
C								
D								
E								
F								
H								
I								
J								
K								
L								
M								
N								
O								
P								
Q								
R								
T								
U								
V								
W								
X								
Y								
Z								
Σ		Σ				Σ		

No. Males Initiated To = Total Duration with Males Init. To. =

(1)

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Interaction with Specified Individuals and Groups
Hunter Data Form V

Circle last tallied minute
3 6 9 12 15 18 21 24 27 30 33 36 39 42 45 min

By S to Females

Peer	Initiations	ΣV	ΣN	ΣX	Duration	ΣV	ΣN	ΣX
B								
C								
D								
E								
F								
H								
I								
J								
K								
L								
M								
N								
O								
P								
Q								
R								
T								
U								
V								
W								
X								
Y								
Z								
Σ		Σ				Σ		

No. Females Initiated To = Total Duration with Females Init. To =

(2)

Department of Human Development

Interaction with Specified Individuals and Groups
Master Data Form V

Circle last tallied minute
3 6 9 12 15 18 21 24 27 30 33 36 39 42 45 min

By Males to S

Peer	Initiations	ΣV	ΣN	ΣX	Duration	ΣV	ΣN	ΣX
B								
C								
D								
E								
F								
H								
I								
J								
K								
L								
M								
N								
O								
P								
Q								
R								
T								
U								
V								
W								
X								
Y								
Z								
Σ	Σ				Σ			

No. Males Initiating to S =

Total Duration with Males Initiating to S =

(3)

Interaction with Specified Individuals and Groups
Master Data Form V

Circle last tallied minute

3 6 9 12 15 18 21 24 27 30 33 36 39 42 45 min

By Females to S

Peer	Initiations	ΣV	ΣN	ΣX	Duration	ΣV	ΣN	ΣX
B								
C								
D								
E								
F								
H								
I								
J								
K								
L								
M								
N								
O								
P								
Q								
R								
T								
U								
V								
W								
X								
Y								
Z								
Σ		Σ				Σ		

No. Females Initiating to S =

Total Duration with Females Initiating to S =

(4)

Name_____ Center_____ Pre Post

Response	No. of Words	(1) Question (2) Statement	(1) Ego Directed (2) Soc. Directed	(1) Initiation (2) Response to Others (3) To Self	TYPE OF SENTENCE (1) Nonsense (2) S-V; (3) S-V-O (4) S-V-O, Phr. (5) Compound	Total No. Sentences
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						

Quality of Voice: (1) Understand 0-20% (2) 20-40% (3) 40-60% (4) 60-80% (5) 80-100%